The Local Public Health Institute of Massachusetts
FY2019 Annual Report

Executive Summary

Introduction: Since January of 2010, the Boston University School of Public Health (BUSPH) has held the contract for and managed the Local Public Health Institute (LPHI) of Massachusetts (MA). With support from the MA Department of Public Health (MDPH), the LPHI staff works with Office of Local and Regional Health and Office of Preparedness and Emergency Management staff, and the LPHI Advisory Committee to pursue the LPHI mission: *To provide and ensure a competent workforce by strengthening and sustaining the capacity of local boards of health to prepare for and respond to public health issues and emergencies and to promote the health of residents of the Commonwealth.* This report describes the LPHI's progress during fiscal year (FY) 2019 (July 1, 2018-June 30, 2019). Below is the description of the LPHI evaluation methodology used to inform the progress report, as well as a summary of the major accomplishments of the LPHI during the reporting period and recommended next steps.

Methodology: The LPHI evaluator and LPHI management team devised several data collection and tracking mechanisms to measure progress toward LPHI objectives, including: (1) standardized training evaluations in paper and web-based formats; (2) administrative tracking by the LPHI Program Manager; (3) web-based tracking of online module utilization; and (4) online surveys of those who engaged in LPHI trainings.

FY19 Accomplishments: The LPHI had another productive year and was successful in advancing work on its program objectives through its partnerships, needs assessment, training, and marketing and communications. The FY19 accomplishments include:

- **Successful partnerships:** Productive collaborations helped the LPHI address the training needs of local health practitioners and to deliver multiple trainings. These partners include the Massachusetts Department of Public Health (MDPH) Office of Local and Regional Health and Office Preparedness and Emergency Response; the Local State Advisory Committee; the DelValle Institute; the New England Public Health Training Center (NEPHTC); and the Coalition for Local Public Health.
- **Responding to needs assessment findings**: In an ongoing effort to address recommendations from the FY17 needs assessment, the LPHI developed a new marketing and communication plan and marketed LPHI's offering at several conferences and via a number of communications materials; included examples of smaller and larger communities in MA in the OYT trainings; began planning a new model for public health leadership development and Public Health 3.0 to replace the LPHI Fellows Program; and worked with the NEPHTC to leverage resources for marketing and training and with partners to deliver trainings during FY19. The LPHI continued its partnership with the DelValle Institute, the MA Health Officers Association (MHOA), and Coalition of Local Public Health (CLPH) to deliver Emergency Risk Communications in Practice trainings, MA Public Health Inspector Training Housing, and Management Training, respectively. With limited resources, LPHI was able to create a new training on tobacco policies and an Emerging Infectious Disease workshop package for use in MA HMCC regions.
- **Training:** LPHI training reached over 1,997 unduplicated users and addressed all 17 program areas, 10 cross-cutting, and four emergency preparedness competencies. Across all trainings, the LPHI engaged practitioners from all the Health and Medical Coordinating Coalition regions and all types of professionals within its target audience. Specific training successes include the following:
  - The *On Your Time Trainings*[1] were completed by 947 individuals from all HMCC regions. In all, 2,464 trainings were completed using *On Your Time trainings*. Additionally, there were 36,435 hits to the online trainings. Forty-four modules underwent comprehensive review and updates.

- A survey was conducted with 26 trainees who completed the *Public Health Core* to assess the impact of the training on trainees' workplace performance. Results indicate that the training has had a positive impact on trainees' knowledge, confidence, and ability to perform their jobs; has helped them to be more helpful and responsive to their public health colleagues and a range of other stakeholders; and has helped to prepare them to perform or address several aspects of public health better.
- Evaluation of the *Emergency Preparedness Certificate Program* found that the 13 trainees who completed the training were satisfied with the training and that it was successful at improving their knowledge about emergency preparedness topics.
- Delivered twice in FY19, 58 practitioners from all HMCC regions except 4C completed the classroom training portion of the *Massachusetts Public Health Inspection Training Housing Certificate Program (MAPHIT Housing)*; 21 completed the virtual house inspection; and 3 completed field training. Evaluation results indicate that trainees were satisfied with various aspects of the training and the training increased their knowledge about the subject matter. Some experienced challenges in navigating the virtual house and accessing field training. A survey of 39 individuals who did not complete all MAPHIT requirements found that, although they were unable to complete the training requirements, they valued the training and would have preferred to complete all aspects of it. Extending the time in which requirements must be completed, periodic reminders, and increased availability of field trainers may enable more individuals to complete all aspects of the training.
- In October, 46 individuals, representing all HMCC regions of MA, completed the most recent iteration of the *Managing Effectively in Today's Public Health Environment* (Management) Course. Evaluation results show that most trainees were satisfied with the course and that the training improved their understanding of the course's subject matter. Most identified actions to apply what they learned in their jobs and many named specific aspects of the course that they considered effective and meaningful. Suggestions for improving satisfaction with some instructors and mentors were offered.
- Forty-two practitioners from HMCC regions 4AB and 2 completed the *Emergency Risk Communications in Practice* (ERCIP) training in February and May. Evaluation results indicate that trainees were satisfied with the training and instructors and that their knowledge about the subject matter improved as a result of the training.
- *Restricting Flavored Tobacco Products to Adult-Only Retail Tobacco Stores – Status in Massachusetts,* a new tobacco policy webinar, was created, launched, and completed by 52 trainees in FY19. Evaluation results indicate that trainees were satisfied with the presentation, content, and training overall; intend to use the content in their work; and believe the webinar improved their understanding of the topic.

Communications and Marketing: The LPHI developed and began implementing its new marketing and communications plan in FY19 and will continue implementation over the next fiscal year. The new plan is informed by survey responses of 352 workforce practitioners. LPHI marketed LPHI offerings by attending, exhibiting, and presenting at local public health conferences and training events. Marketing materials used to promote LPHI trainings included training cards, lists of LPHI trainings, training calendars, and an e-newsletter.

Recommendations: Based on the FY19 evaluation findings, the LPHI should:

1. Consider conducting additional marketing of the OYT trainings in HMCC Regions 1 and 3 and ensure that OYT trainings meet the needs of practitioners in those regions;
2. Conduct additional marketing of OYT trainings to Board of Health members to build on the modest FY19 increase in their utilization;

3. Review detailed feedback provided by trainees and non-completers about MAPHIT, particularly that about the virtual house and field training, and consider the feasibility of extending the time in which requirements must be completed, sending periodic reminders to trainees, and implementing steps to increase the availability of field trainers.
4. A. Consider whether it is feasible for the Management Course to meet the additional training needs identified by trainees;
   B. Address recommendations related to the evaluation and managing budgets sessions; and incorporate suggestions to increase interaction among trainees.
   C. Pursue suggestions to improve trainee experiences with mentors (e.g., introduce them earlier in the course, clearly identify them in the sessions, and explore ways to increase the guidance they provide weekly).
   D. Reach out to instructor with lower satisfaction to address foster improvement and consider gathering baseline data on trainees' knowledge/experience with various topics at registration to help instructors plan their sessions.

I. Introduction:

Since January of 2010, the Boston University School of Public Health (BUSPH) has held the contract for and managed the Local Public Health Institute (LPHI) of Massachusetts (MA). With support from the MA Department of Public Health (MDPH), the LPHI staff work with the LPHI Advisory Committee to pursue the LPHI mission: *To provide and ensure a competent workforce by strengthening and sustaining the capacity of local boards of health to prepare for and respond to public health issues and emergencies and to promote the health of residents of the Commonwealth.* In order to achieve the LPHI's six program objectives (See logic model in the appendices), the LPHI carries out work in four areas: (1) Partnerships, (2) Needs Assessment, (3) Training, and (4) Communications and Marketing. To streamline the reporting process and increase utility for quality improvement, this report is organized around those areas of work. It covers the period of July 1, 2018 through June 30, 2019 (i.e., FY19). For more information about any of the educational offerings or documents referenced in this report, contact the LPHI Project Manager at lphi@bu.edu or (617)358-3988.

II. Methodology:

The LPHI evaluator and LPHI management team devised several data collection and tracking mechanisms to measure progress toward LPHI objectives and desired outcomes. Below are descriptions of those utilized to inform this report.

- ***Standardized training evaluation forms:*** All LPHI-supported trainings must include an evaluation component. Whenever possible, such evaluations include pre/post quiz questions to assess the extent to which students acquired knowledge as a result of training. The evaluations also assess trainee satisfaction with several aspects of training. Evaluations are self-administered with trainees either completing them on paper or online.
- ***Administrative tracking:*** The project manager routinely tracks data related to the size and composition of the Advisory Committee and its meetings, the number and types of trainings and demographics of training participants, the number and types of collaborating partners, the number of trainings with a distance education component, and the status of the communications and marketing plan, including the number of newsletters.
- ***Online training evaluations:*** Google Analytics is used to track unique and returning hits to the *On Your Time Training's* webpage. Trainees who wish to obtain a certificate of completion and contact hours for use of the online trainings may do so online as well.
- ***Online surveys and telephone:*** As resources allow, brief telephone interviews and/or surveys are conducted with completers of LPHI courses to assess the impact of the training on workplace/job performance or for other purposes as needed.

The LPHI (and NEPHTC) evaluation strategies are based upon the Kirkpatrick Training Evaluation Model,[1] which suggests that training should be evaluated on four levels:

[1] Kirkpatrick Training Evaluation Model available at:
http://www.kirkpatrickpartners.com/OurPhilosophy/TheNewWorldKirkpatrickModel/tabid/303/Default.aspx

Level	What is assessed at each level?	How does LPHI measure each level?
1	Trainee satisfaction with and engagement in training, and perceived relevance of training to the trainee's job	Evaluated based on three Likert scale ratings related trainee agreement (1=strongly disagree to 5=strongly agree) with statements that assess their satisfaction with and the relevance of training to their jobs
2	Trainee acquisition of intended knowledge, skills, and attitudes, as well as confidence about and commitment to use training content	Evaluated based on results of a paired samples t-test comparing mean pre-test and mean post-test scores for training completers* and one statement rated by a 5-point Likert scale (1=strongly disagree to 5=strongly agree) to assess perceived knowledge gains
3	Trainee application of what was learned in training when trainee is back on the job	Evaluated via a follow up survey** using a series of Likert scale ratings that allow training completers to express agreement (1=strongly disagree to 5=strongly agree) with statements that assess the impact of training on their job performance
4	The degree to which targeted outcomes or desired impact occur as a result of critical on the job behaviors that result from training	Methodology for assessing level 4 impact has not yet been developed

*Whenever possible, a pre/post-test is administered to assess level 2 results. However, for brief (e.g., one-hour webinars) or trainings proven effective on level 2 over time, a pre/post-test may not be administered.
**Time period for the follow up survey differs by training and depends upon how long LPHI management and instructors believe trainees need to apply the material learned in the training. Follow up surveys are generally completed within six months of the end of a given training.

Quantitative analyses are conducted using SPSS or Excel and thematic analysis is conducted with qualitative data. For more detail on any of the data sources described above or related evaluation documents, contact the LPHI evaluator at hopewk@comcast.net.

III. Findings:

A. Partnerships

Partnerships with public health partners are essential to achieving two important LPHI outcomes: (1) *Ensuring that the LPHI trainings and programs are aligned with the learning priorities of the LPH workforce and are of high quality*; and (2) *increasing educational offerings and collaborative projects*. In FY19, partnerships with several organizations helped the LPHI to achieve these outcomes.

LPHI has a productive partnership with its funders, the Office of Local and Regional Health (OLRH) and the Office Preparedness and Emergency Management (OPEM) at the Massachusetts Department of Public Health (MDPH). In FY19, the LPHI met with the Project Officer from the OLRH 11 times to review the LPHI's workplan and progress. There was also regular communication between LPHI and OLRH about upcoming events and educational opportunities for local public health in MA. Over the course of the year, LPHI met with DPH staff (OLRH, OPEM, MDPH leadership, and the Inter-Agency Working Group) 11 times to discuss workstreams, plans, progress and to answer questions. Additionally, the LPHI provided 12 (one per month) sets of Delivery of Service reports to both the OLRH and OPEM throughout FY19.

The LPHI worked closely with other organizations in FY19 to inform LPHI planning; market the LPHI; plan and deliver training; engage participants and instructors, and/or provide resources (financial, subject matter expertise) for training. These partners are described below, including how their partnership with LPHI contributed to the LPHI's progress in FY19.

The Local State Advisory Committee (LSAC) is an advisory body to the Commissioner of the Massachusetts Department of Public Health (MDPH) on public health emergency preparedness. Since 2013, the 30-member LSAC has served as the Advisory Committee for the LPHI. In FY19, the LPHI staff met with LSAC twice to present on LPHI progress.

The New England Public Health Training Center (NEPHTC) is funded by the Health Resources and Services Administration and has a mission to strengthen the technical, scientific, managerial, and leadership competencies of the current and future public health workforce in New England to ensure regional capacity to deliver high quality essential public health services. Like the LPHI, the NEPHTC is managed by the Boston University School of Public Health (BUSPH). With both public health training centers located under one roof, the LPHI and NEPHTC are able to leverage resources to meet the training needs of the local public health workforce and conduct joint marketing efforts. In FY19, LPHI and NEPHTC worked together to deliver training on health equity and strategic skills such as systems thinking and public health communications. The NEPHTC is one of ten trainings centers that make up the Public Health Learning Network (PHLN). By partnering with NEPHTC, LPHI's partnerships and the training opportunities available to the Commonwealth's local public health workforce are expanded nationwide. Likewise, LPHI and NEPTHC training content are made available to practitioners in other states across the country. The PHLN's Learning Navigator provides public health practitioners access to quality, curated online e-learning content. In FY19, several e-learnings from the LPHI's management course including Coaching Skills, Holding Effective Meetings, and Onboarding New Employees received a quality designation from the Learning Navigator.

The Coalition for Local Public Health (CLPH) is comprised of five public health organizations: The Massachusetts Association of Health Boards (MAHB), Massachusetts Association of Public Health Nurses (MAPHN), Massachusetts Environmental Health Association (MEHA), Massachusetts Health Officers Association (MHOA), and Massachusetts Public Health Association (MPHA). These organizations are dedicated to advocating for the resources needed to promote healthy communities in Massachusetts. Collectively, the CLPH organizations represent over 4,900 citizens and professionals interested in supporting the Commonwealth's local health infrastructure. In FY19, the CLPH helped the LPHI market its offerings to their respective members. LPHI management met with CLPH members twice in FY19 to brief members on LPHI goals and to ask for support and participation in surveys.

The DelValle Institute for Emergency Preparedness, founded in 2003, is a training institute with a mission to enhance community resilience in order to prepare for, respond to, and recover from emergencies that impact health and access to healthcare. The DelValle Institute links the latest research and guidance with best practices in the field to deliver high-quality, skills-based preparedness and response education for healthcare and public health practitioners and their public safety partners. In FY19, the LPHI and DelValle met and collaborated with the Western MA Public Health Association to respond to requests for the training in the region and delivered Emergency Risk Communications in Practice (ERCIP) training to approximately 40 practitioners in the region. Evaluation data for the ERCIP course is provided in the *Training* section of this report (see section 3).

B. Needs Assessment (FY19 Follow Up Activities)

LPHI trainings are designed to improve the 17-program area and 10 cross-cutting competencies identified by the Council on Linkages as critical for public health practice. Additionally, LPHI trainings address four emergency preparedness competencies. A first full draft of an LPHI competency report was completed in February of 2010 and an inventory of existing trainings and a gap analysis were completed in July 2010. Since then, LPHI staff have been cross-walking LPHI offerings with the competencies to ensure that LPHI resources are being used to address the competencies needed by the LPHI workforce. The trainings provided by the LPHI in FY19 covered all 31 competencies. Although all of the competencies are addressed through the LPHI's current offerings, the LPHI continues to assess the training needs of the local public health workforce to achieve the outcome of *improved understanding of the training needs of local public health, as well as the training that exist and those that are needed.* To that end, trainees are routinely asked to provide information about desired training topics for future trainings on their session evaluation form. In this way, the LPHI is able to track the needs and interests of those engaged in training.

In FY17, the LPHI completed an assessment with LSAC members, who are charged with advising the LPHI, to assess the LPHI's reach, accessibility/responsiveness, value, and program management. The assessment also sought feedback on the LPHI Fellows Program and recommendations for training quality improvement. The LPHI evaluator interviewed the LSAC Chairman and five of the six members of LSAC's Education Subcommittee and conducted an online survey to which 20 of LSAC's 30 members responded (a 66.6% response). The *Assessment of the Local Public Health Institute: Report of Local State Advisory Committee Feedback* provides detailed assessment findings and a series of recommendations. Action steps were taken to address the recommendations in FY18 and continued into FY19. The most recent activity to address the recommendations is described below.

Recommendation 1: Conduct additional marketing to local health practitioners about the LPHI's offerings and educate local board of health members about the importance of such training. In FY19, the LPHI's marketing efforts included exhibits and stakeholder engagement the Yankee Environmental Conference and the annual conferences of MHOA and MAPHN. The LPHI also engaged a marketing consultant to develop an integrated communications and marketing plan. Implementation of the plan began in FY19 and will continue into FY20. The plan can be found in the appendices.

Recommendation 2: When updating or creating new trainings, review them with an eye toward their applicability to practitioners serving small towns as well as those in larger communities. In FY19, LPHI included in some of its On Your Time e-learnings examples from both large and small communities(e.g., Hingham and Fairhaven examples in Hoarding: A Special Housing Topic; Franklin County in Health

Promotion and Health Equity; Hudson and Norwood in Housing Programs for Regulators; and Cambridge and Quincy in Body Art Programs for Regulators.

Recommendation 3: Review the goals of the LPHI fellows program and modify the requirements and application accordingly.

The LPHI Fellows Program was created to encourage individuals within the MA state and local public health workforce to engage in continuing education and individual professional development, give back to the profession through individual service, and support the work of the LPHI. Each year since 2012, the LPHI inducted new members into the LPHI Fellows Program. Thereafter, LPHI Fellows often served as subject matter experts and course instructors for the LPHI. In FY19, in discussions with OLRH and CLPH, the program was put on hiatus, and will be disbanded. During FY2020, LPHI will work with these partners to plan for the next iteration of public health leadership development and Public Health 3.0, which emphasizes collaborative engagement and actions that directly affect the social determinants of health inequity.

Recommendation 4: Strategize with MDPH and LSAC to expand the LPHI's resources and ensure its sustainability. The LPHI worked with the NEPHTC to leverage resources for marketing and training and with partners such as the CLPH and BPHC to deliver trainings during FY18. The LPHI continued its partnership with the DelValle Institute to bring ERCIP trainings to Massachusetts practitioners. As mentioned above, LPHI and DelValle delivered ERCIP training to approximately 40 practitioners in Western MA in FY19.

The needs assessment also led to two additional recommendations as resources allow.

Recommendation 5: Expand access to the blended courses (e.g., offering more slots for participants, offering courses more often each year). In addition to the ERCIP training described above, partnerships enabled the LPHI to expand two additional trainings in FY19. With MHOA, the LPHI offered the MA Public Health Inspector Training (MAPHIT) Housing course twice. In collaboration with the CLPH, the LPHI delivered its Management Training, which began in FY18 and was completed in FY19.

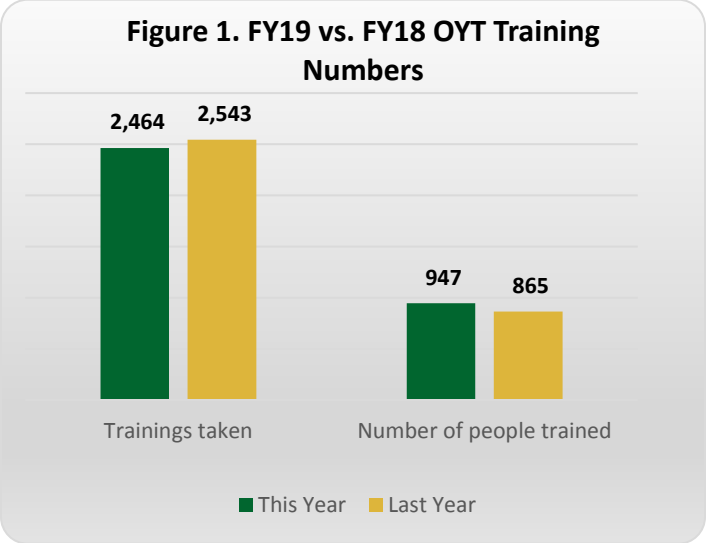
Recommendation 6: Review and prioritize recommendations for future training and other initiatives, including in-depth management trainings. Although resources were limited, LPHI was able to create a new training on tobacco policies as well as an Emerging Infectious Disease package workshop package for use in MA HMCC regions.

C. Training

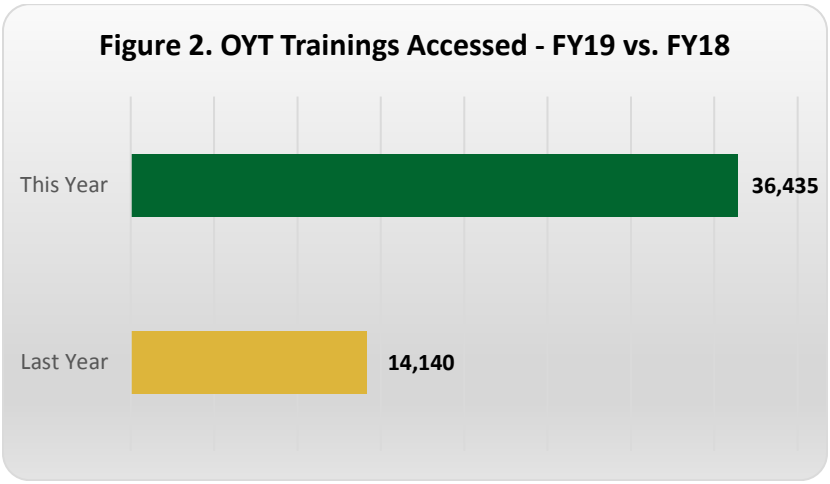
The LPHI provides a range of training programs to achieve the outcome of *an increase in the number of local public health workforce members trained on cross-cutting, program area, and emergency preparedness competencies.* Additionally, the LPHI has focused on distance education *to achieve an increase in participation in LPHI offerings across all regions.* In FY19, the LPHI delivered training to 3,666 unduplicated individuals (up from 908 in FY18). The FY19 trainings cover all 17 program area competencies and 10 cross-cutting competencies, as well as the four emergency preparedness competencies (See the appendices). Below, the utilization and outcomes data associated with these trainings are provided.

1. On Your Time Trainings

In FY19, 947 unduplicated individuals completed 2,464 trainings through the *On Your Time (OYT)* trainings. There was an increase in the number of individuals trained in FY19 vs. FY18 (947 vs. 865, respectively), while there was a decrease in the number online trainings utilized in FY19 vs. FY18 (2,464 vs. 2,543) (See Figure 1).

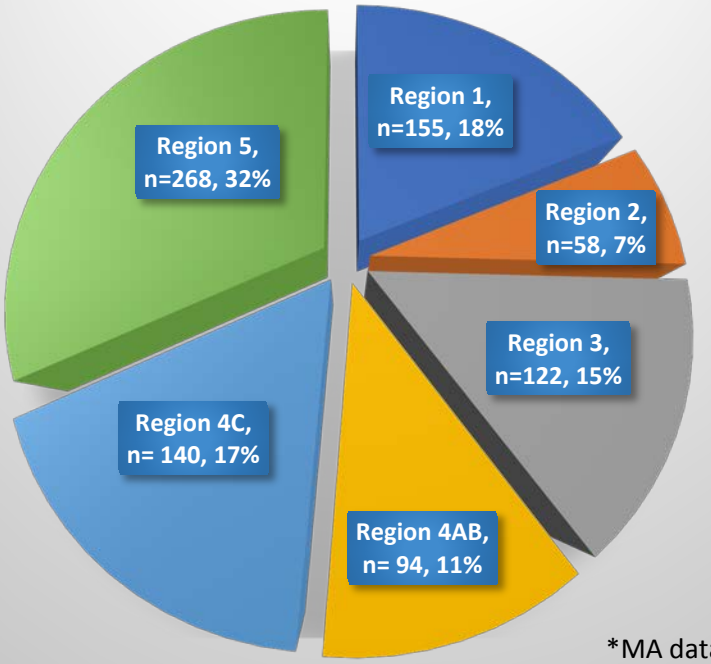


In addition to their value as trainings, the online trainings can also be used by public health practitioners for reference purposes. For example, rather than completing an entire online training module and the evaluation components, a practitioner may log in to find specific information he/she needs. As shown in Figure 2, in FY19, there were 36,435 "hits" to the online trainings compared to 14,140 in FY17 (a more than 157% increase).



Just over 86.6% of *all* of those who completed the trainings work in one of the Commonwealth's Health and Medical Coordinating Coalition (HMCC) regions. A map of the HMCC regions is included in the Appendices. As shown in Figure 3, OYT users work in all of the HMCC regions with the highest utilization among those in Regions 4C (34%) and 4AB (17%) and lowest in Region 2 and 5 (15% each). The LPHI may want to consider additional marketing of the trainings to practitioners in HMCC Regions 1 and 3 and, as part of future needs assessment efforts, ensure that the constellation of trainings meet the needs of practitioners in those regions.

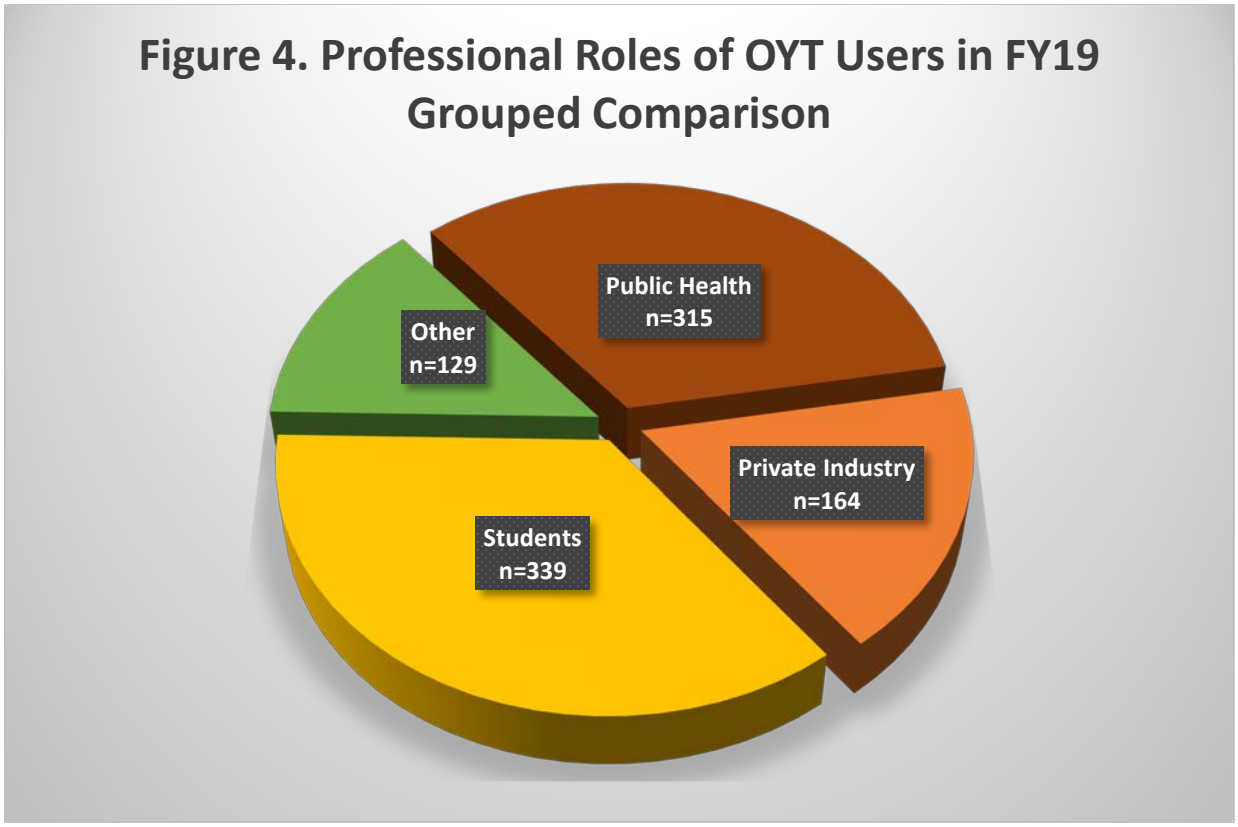
Figure 3. HMCC Regions of FY19 OYT Users



*MA data only

The LPHI tracks the professional roles of OYT users, offering 17 options for users to choose from, including 10 public health roles, five "others" (i.e., public safety, health care, school nurses, social

services, undeclared), private industry, and student (See the appendices for role crosswalk). In FY19, 124 OYT users were from private industry. By training those in private industry, the LPHI helps to ensure compliance with the laws and regulations of the Commonwealth (e.g., by ensuring tanning booths are operated correctly or that Title 5 systems are being installed properly) and, thus, helps industry to reinforce the work of local public health. In FY19, 146 OYT users were students. By training students, the LPHI is exposing them to the roles and responsibilities of local health practitioners and contributing to the preparation of the future public health workforce. By grouping the 10 public health roles, it is easier to assess the proportion of OYT trainings used by public health practitioners vs. students, those in private industry, and others. As show in Figure 4, 315 public health professionals utilized the OYT trainings in FY19. They represent 33.2% of OYT users.



As show in Figure 5, of the 315 practitioners who utilized OYT trainings in FY19, 40.6% are in environmental health (37.1% inspectors/specialists/sanitarians and 3.5% inspection services and other departments). Public health nurses comprised 14.3% of OYT users in FY19 while public health coordinators and program managers made up roughly 11% of users each. Although utilization of OYT trainings among BOH members (4.1%) is still relatively low in comparison to other types of LPH practitioners, it is a small increase over FY18 when BOH members made up 3.8% of the public health practitioner use of the OYT trainings. The LPHI should build upon this modest increase by marketing the availability and value of the OYT trainings to BOH members.

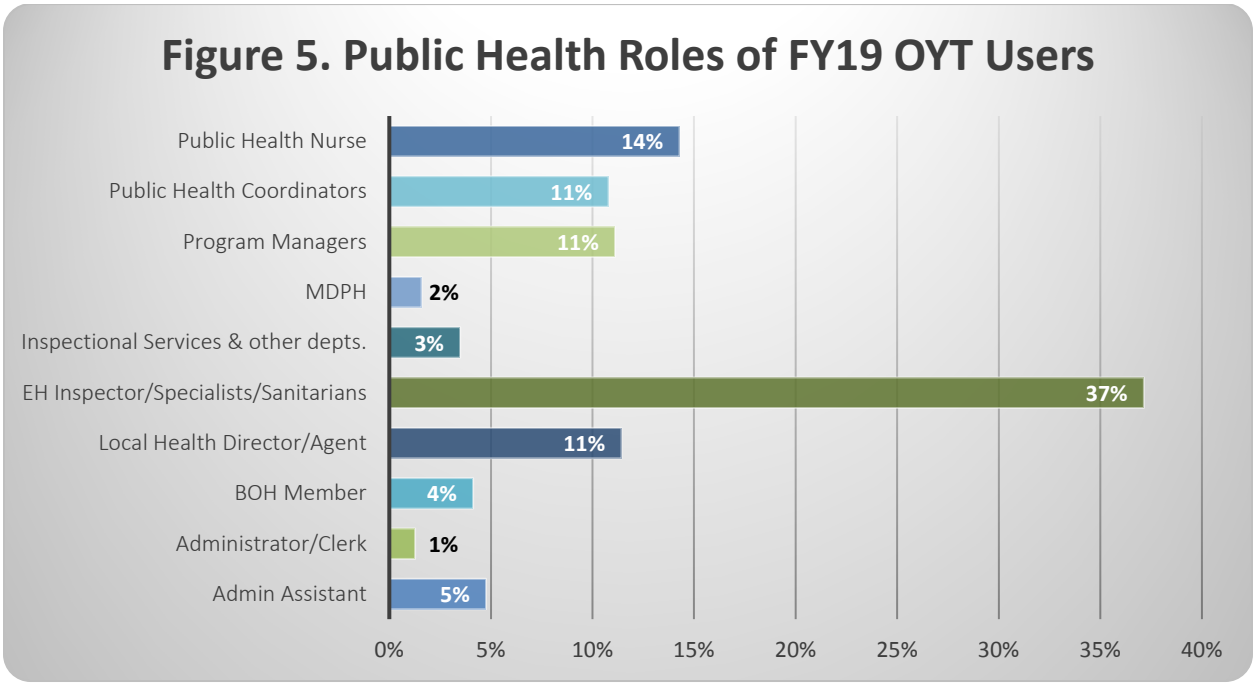
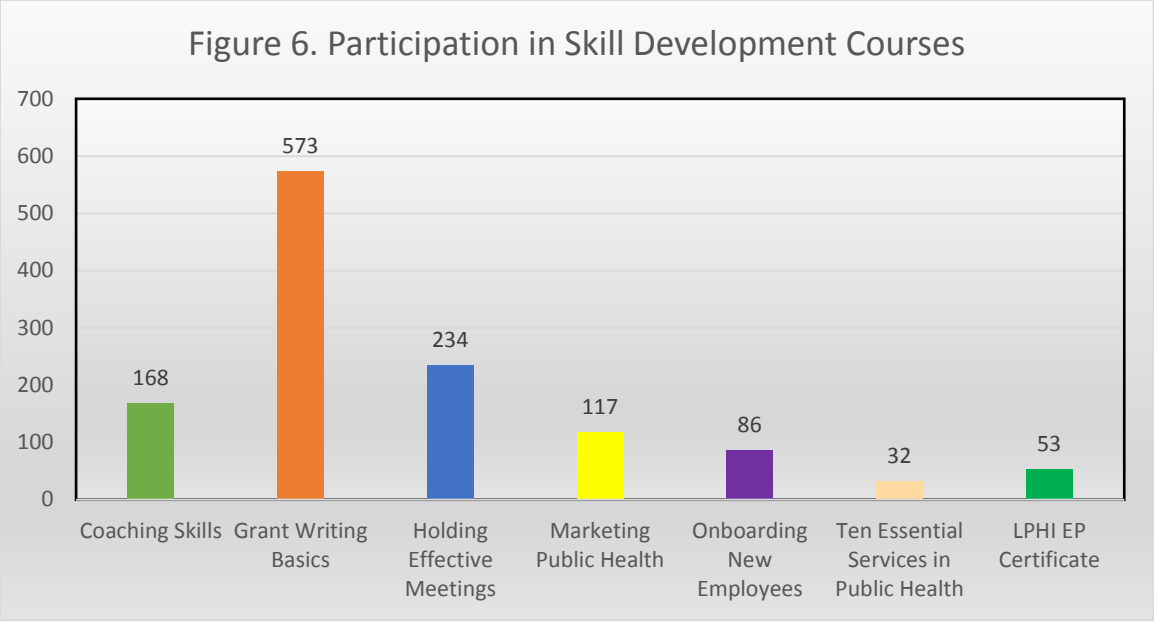


Table 1. shows the FY19 utilization of 47 OYT trainings and the mean number of correct quiz answers at pre-test and post-test with the percent increase in correct responses from pre to post. In all cases, the mean number of correct answers was higher at post-test than at pre-test, which indicates that understanding of the subject matter improved as a result of the training.

Table 1. FY19 OYT utilization and correct quiz answers at pre/post-test

OYT Training	n	Pre-test mean of correct answers	Post-test mean of correct answers	% improvement from pre to post
Administrative Search Warrants	22	4.68	7.50	60.26
Affordable Care Act and Local Public Health	1	12.00	14.00	16.67
Animal Control	11	5.00	10.45	109.00
Bed Bugs	58	5.13	10.51	104.87
Body Art Programs for Regulators	12	5.83	10.91	87.14
Community Preparedness: Awareness Level	27	5.85	6.85	17.09
Community Recovery: Awareness Level	16	5.37	7.50	39.66
Dealing with Stress in Disasters	24	5.91	11.83	100.17
Drinking Water and Private Wells	5	3.60	12.00	233.33
Emergency Dispensing Site Guidance	36	2.33	4.00	71.67
Emergency Dispensing Site Management	29	5.58	9.96	78.49
Emergency Preparedness Begins at Home	12	3.50	3.91	11.71
Emergency Preparedness in MA and LBoH Role	116	4.18	8.75	109.33
Environmental Health and Disease Surveillance	17	1.94	4.58	136.08
Farmers Markets	6	1.47	10.16	591.16
Food Protection Programs for Regulators	26	5.00	8.03	60.60
Food Safety for Food Establishment Operators	4	9.00	11.50	27.78
Hazardous Materials and Waste	4	8.00	14.50	81.25
HMCC Sustainability	65	5.15	10.40	101.94
Health Promotion and Health Equity	35	7.42	11.85	59.70
Hoarding: A Special Housing Topic	51	5.49	8.78	59.93
Housing Programs for Regulators	48	6.27	10.20	62.68
ICS and Public Health	39	3.56	7.92	122.47
Immunizations	32	7.09	11.31	59.52
Indoor Ice Skating Rink Programs for Regulators	8	5.25	11.00	109.52
Infectious Disease Case Management	39	6.71	10.23	52.46
Isolation and Quarantine	14	5.14	9.14	77.82
Medical or Biological Waste for Regulators	6	2.83	11.16	294.35
Mold: A Special Housing Topic	44	5.00	9.34	86.80
Nuisance Control Abatement and Removal	36	4.38	8.91	103.42
Orientation to Local Public Health in MA	222	8.40	14.12	68.10
Public Health Law and Legal Issues in MA	55	5.20	9.12	75.38
Public Health Workforce Protection	12	4.41	9.25	109.75
Recreational Camps for Children	6	5.66	10.16	79.51
Recreational Waters: Bathing Beaches	3	5.33	11.33	112.57
Recreational Waters: Swimming Pools	14	6.14	12.50	103.58
Sanitary Surveys for Variances	3	5.33	9.00	68.86
Solid Waste and Recycling	7	5.85	12.28	109.91
Strategic National Stockpile	5	3.60	8.80	144.44
Strategies for Funding BOH Programs	5	4.60	9.00	95.65
Surveillance of Infectious Diseases	37	5.02	10.75	114.14
Sushi: A Special Food Topic	6	3.50	7.33	109.43
Tanning Facilities for Regulators	68	9.38	19.82	111.30
Temporary Food Establishments	5	6.00	10.20	70.00
Tickborne Disease Surveillance and Prevention	14	6.85	9.42	37.52
Using the Health and Homeland Alert Network	12	4.08	7.08	73.53
Wastewater and Title 5	14	10.00	14.42	44.20

Seven OYT courses went live on Moodle (the NEPHTC server) in FY19. Because the trainings were on a different platform than the other OYT trainings, data were accessed and must be reported separately for this fiscal year. In future, when possible, these trainings will be adapted into the OYT model and will be hosted on the LPHI system, easing data collection. These courses address a range of skill development areas for public health practitioners: Coaching Skills, Grant Writing Basics, Holding Effective Meetings, Marketing Public Health, Onboarding New Employees, Ten Essential Services of Public Health in Action, and the LPHI Emergency Preparedness certificate. Figure 6 shows the number of participants in each of the trainings.



Over half (594 or 56.6%) of the trainees are in Massachusetts. Although Regions 4AB and 4C had the highest representation in the trainings, all regions were represented. (See Table 2).

Table 2. HMCC Region of trainees

	Total* (n=810)	Coaching (n=62)	Grant-writing (n=523)	Holding Effective Meetings (n-64)	Market-ing Public Health (n=62)	Onboard-ing New Employees (n=48)	Ten Essential Services (n=17)	LPHI EP Certificate (n=34)
Region 1	20 (2.5%)	2 (3.2%)	7 (1.3%)	2 (3.1%)	5 (8.1%)	2 (4.2%)	1 (5.9%)	1 (2.9%)
Region 2	64 (7.9%)	5 (8.1%)	28 (5.4%)	5 (7.8%)	7 (11.3%)	5 (10.4%)	4 (23.5%)	10 (29.4%)
Region 3	68 (8.4%)	7 (11.3%)	35 (6.7%)	7 (10.9%)	5 (8.1%)	4 (8.3%)	4 (23.5%)	6 (17.6%)
Region 4**	611 (75.4%)	44 (71%)	432 (82.6%)	43 (67.2%)	41 (66.1%)	34 (70.8%)	6 (35.3%)	11 (32.4%)
Region 5	47 (5.8%)	4 (6.5%)	21 (4.0%)	7 (10.9%)	4 (6.5%)	3 (6.3%)	2 (11.8%)	6 (17.6%)

*duplication of trainees likely exists **includes students in Boston area

Those who completed the seven trainings represent a range of professional roles (See Table 3). Students comprised nearly 45% of the trainees. Among public health practitioners, public health nurses had the highest representation (9.1%).

Table 3. Roles of trainees

	All	(n=810)*	Coach-ing	(n=62)	Grant-writing	(n=523)	Holding Effective Meetings	(n=64)	Marketing Public Health	(n=62)	On-board-ing New Employees	(n=48)	Ten Essential Services	(n=17)	LPHI EP Certificate	(n=34)
Admin Assistant	23	2.8%	4	6.5%	10	1.9%	0	0.0%	3	4.8%	3	6.3%	1	5.9%	2	5.9%
Administrator/ Clerk	19	2.3%	2	3.2%	5	1.0%	5	7.8%	4	6.5%	2	4.2%	0	0.0%	1	2.9%
BOH Member	56	6.9%	8	12.9%	30	5.7%	8	12.5%	6	9.7%	4	8.3%	0	0.0%	0	0.0%
Local Health Director/Agent	34	4.2%	4	6.5%	0	0.0%	10	15.6%	7	11.3%	5	10.4%	4	23.5%	4	11.8%
EH Inspector/ Specialists/ Sanitarians	48	5.9%	2	3.2%	21	4.0%	5	7.8%	6	9.7%	6	12.5%	6	35.3%	2	5.9%
Healthcare	61	7.5%	5	8.1%	31	5.9%	0	0.0%	12	19.4%	8	16.7%	0	0.0%	5	14.7%
Inspectional Services & other depts.	8	1.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	10.4%	0	0.0%	3	8.8%
MDPH	12	1.5%	10	16.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	2	5.9%
Other	40	4.9%	12	19.4%	1	0.2%	12	18.8%	2	3.2%	7	14.6%	1	5.9%	5	14.7%
Private Industry	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Program Managers	1	0.1%	0	0.0%	1	0.2%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Public Health Coordinators	55	6.8%	6	9.7%	17	3.3%	6	9.4%	17	27.4%	4	8.3%	1	5.9%	4	11.8%
Public Health Nurse	74	9.1%	7	11.3%	47	9.0%	8	12.5%	2	3.2%	4	8.3%	4	23.5%	2	5.9%
Public Safety	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
School Nurse	10	1.2%	0	0.0%	0	0.0%	10	15.6%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Social Services	5	0.6%	2	3.2%	0	0.0%	0	0.0%	3	4.8%	0	0.0%	0	0.0%	0	0.0%
Students	364	44.9%	0	0.0%	360	68.8%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	4	11.8%

*duplication of trainees likely exists

Launched in FY16, the "Public Health Core" is a training certificate program comprised of 10 On Your Time training modules: (1) Orientation to Public Health in MA; (2) Public Health Law and Legal Issues in MA; (3) Emergency Preparedness in MA; (4) Food Protection for Regulators; (5) Housing; (6) Nuisance and Abatement; (7) Disease Case Management; (8) Health Promotion and Health Equity; (9) Immunization; and (10) Surveillance of Infectious Diseases. The first three must be completed first; the rest can be completed in any order. All ten trainings are available on-line, 24/7, and can be taken at the trainee's own pace, but must be completed within five years of application to earn the certificate, and a score of 90% or better is required on the training post-tests. Since its launch, 22 people have completed all program requirements. In April of 2019, the LPHI evaluator launched an online survey to assess the longer-term impact (Kirkpatrick Level 3) of the training on those who completed it, specifically whether and how the Public Health Core had influenced their performance in the workplace. Twenty-six individuals responded to the survey and reported that Public Health Core has had a positive impact on their knowledge, confidence, and ability to perform their jobs. Respondents believe they are more helpful and responsive to their public health colleagues and a range of other stakeholders and that they perform or address several aspects of public health better as a result of training. The full report for the Public Health Core Level 3 evaluation can be found in the appendices.

In FY17, the LPHI, in conjunction with the Office of Preparedness and Emergency Management of the Massachusetts Department of Public Health, created and produced a second training certificate for the Local Public Health workforce: The Emergency Preparedness Training Certificate. The Emergency Preparedness (EP) Certificate was developed for staff and volunteers from municipal or state agencies across Massachusetts who are responsible for public health emergency preparedness and response activities. It involves successfully completing 15 self-paced trainings totaling 27 hours of study and a final, culminating exam to receive a training certificate. All required trainings are available on-line, 24/7, and can be taken at the trainee's own pace. All but four courses are hosted by the LPHI; the others are hosted by the Federal Emergency Management Agency and the University of Washington. Since its launch, 13 individuals have completed the Emergency Preparedness bundle. Also, in April of 2019, the LPHI evaluator analyzed data related to satisfaction, relevance/intention to use the training content in one's work, and changes in knowledge (Kirkpatrick Levels 1 and 2). The evaluation results indicate that the Emergency Preparedness Certificate Program has been successful at increasing trainees' knowledge about emergency preparedness topics. Those who've completed the certificate program to date are satisfied with the training and most will apply the training to a state or national certification. The full report for the Emergency Preparedness Certificate Program can be found in the appendices.

In FY19, forty-four OYT trainings underwent comprehensive review to ensure their content (e.g., regulations, best practices) is up-to-date, to update them to a new style sheet, add "job aids" (two page take-aways that highlight the most relevant information from the training), and to make them Americans With Disabilities Act/508 compliant. In FY20, the LPHI evaluator will evaluate a subset of OYT trainings analyzing data provided by individuals who completed those trainings since their comprehensive review/updates. The evaluator will then produce a report of evaluation findings with recommendations for any necessary improvements.

2. Foundation Course

The goal of the Foundations Course is for Massachusetts public health practitioners who carry out routine and emergency environmental and population-focused health functions to provide the ten

essential public health services according to the local and state laws, regulations, and policies. Participants may be new to the field of public health or have experience and interest in advancing their knowledge and skills. The course work involves 60 hours of work, including three days of classroom training; two webinars; 16 self-paced online trainings; and additional work (e.g., pre-work, preparing questions for instructors and panelists). In FY19, LPHI did not run the Foundations Course. Rather, it used the time to analyze the course and develop a plan for quality improvement. The course will be offered again in FY 2020 with an eye toward modifying the online Core Public Health Certificate to be equivalent.

3. MA PHIT Housing

MAPHIT Housing is designed for health and housing inspectors charged with enforcement of the state sanitary codes 105 CMR 400 and 410: General Administrative Procedures and Minimum Standards of Fitness for Human Habitation. The program includes prerequisite *On Your Time* trainings, three days of classroom training, a virtual housing inspection, five supervised field training inspections, and an online final assessment with questions about inspection processes and required documentation. Those who successfully complete classroom training earn continuing education credits and those who successfully complete all components of the program are issued a certificate. Although a cohort of trainees begins the program at the same time, individuals may complete the field inspection and assessment portions of the program on different timelines (but within one year). Therefore, the trainees within a given cohort may not all complete the program at the same time.

Two iterations of classroom training took place within the fiscal year, in May and December. The December 2018 training was offered in Western MA, so as to be more readily accessible to the public health workforce there. Table 4 below shows the number of participants that completed the classroom training, virtual house inspection, and field training in 2018. Table 5 shows the number of individuals who have completed the final assessment from the 2017 and 2018 cohorts as of January 2019. Tables 6 and 7 show the regions in which those trainees work and their professional roles, respectively.

Table 4. Number of 2018 trainees completing MAPHIT Housing components

MAPHIT Housing Program Components	May 2018 (n)	December 2018 (n)
Classroom Training	31	27
Virtual House Inspection	14	7
Field Training	3	0

Table 5. Number of 2017 and 2018 trainees completing the final assessment

Cohort	(n)
May 2017	7
December 2017	10
May 2018	3
December 2018	0

The trainees came from all the HMCC regions of Massachusetts except 4C (Boston).

Table 6. HMCC Regions in which trainees work

Region:	May (n)	May (%)	Dec (n)	Dec (%)
Region 1	2	6.5	16	43.2
Region 2	5	16.1	3	11.1
Region 3	5	16.1	1	3.7
Region 4AB	10	32.3	5	18.5
Region 4C	0	0	0	0
Region 5	8	25.8	2	7.4
State	1	3.2	0	0
TOTAL:	31	100	27	100

In both cohorts, and as one might expect given the nature of the MAPHIT Housing Certificate Program, most of the trainees are environmental health inspectors, specialists, and/or sanitarians or in inspectional services and other departments.

Table 7. Role of MAPHIT Housing Trainees

Role:	May (n)	May (%)	Dec (n)	Dec (%)
Administrative Assistant	0	0	1	3.2
Administrator/Clerk	0	0	0	0
BOH Member	0	0	0	0
Local Health Director/Agent	4	14.8	5	16.1
Environmental Health Inspector/Specialists/Sanitarians	21	77.7	15	48.4
Healthcare	0	0	0	0
Inspectional Services & other depts.	0	0	8	25.8
MDPH	0	0	0	0
Other	0	0	0	0
Private Industry	0	0	0	0
Program Managers	1	3.7	1	3.2
Public Health Coordinators	0	0	0	0
Public Health Nurse	1	3.7	1	3.2
Public Safety	0	0	0	0
School Nurse	0	0	0	0
Social Services	0	0	0	0
Students	0	0	0	0
TOTAL:	27	100	31	31

Overall, the evaluation findings indicate that the training was effective at Kirkpatrick levels one and two. The findings reveal that most trainees were satisfied with the instructors and classroom training, indicating that the classroom training was relevant and something they could foresee using in their work. The also believed that, as a result of the classroom training, they better understand the content. Although the majority provided positive ratings of the virtual house, several people commented on

challenges they encountered (e.g., related to navigation, speed, graphics, and citations). The findings related to the final assessment suggest that the course improved trainees' understanding of the subject matter and that they had identified ways in which they would use the information they gained in their work. The evaluation findings informed two recommendations, namely to:

1. Review the detailed feedback about the virtual house and address the identified challenges; and
2. Ensure that, in 2020, data related to field inspection are analyzed again and include the 2018 and 2019 cohorts to further assess trainee satisfaction with the field inspections.

Item 1 was completed and Item 2 will be addressed in the 2019 annual MA PHIT Housing evaluation report. A full report of findings is available for the two iterations of the course in the appendices.

Also, in FY19, the LPHI evaluator reached out to 68 individuals who had not yet completed all of the requirements of MAPHIT Housing as of May 2019 to understand what the barriers to completion are and whether/how LPHI may be able to support completion of the program requirements. An online survey, completed by 39 individuals (57.3%), provided information about:

- Whether the individuals intended to complete all aspects of the training when they registered and if not, why not.
- For those who had intended to complete all aspects of the training, why had they not done so and whether/how the LPHI could help trainees to complete all aspects of the training.

Only one individual registered for MAPHIT Housing with the intention of not completing all program components. The rest indicated that, although they were unable to complete the training requirements, they valued the training and would have preferred to complete all aspects of it. The findings indicate that, if the LPHI could perhaps extend the time in which requirements must be completed, send periodic reminders, and implement steps to increase the availability of field trainers, it may be possible for more individuals to complete all aspects of the training. A full report of the survey findings is available in the appendices. LPHI will consider how to address this feedback during FY 2020.

4. Managing Effectively in Today's Public Health Environment

Managing Effectively in Today's Public Health Environment course (herein called the Management Course) takes place over 18 weeks and is comprised of 15 sessions (10 live webinars, three self-paced online sessions, and two classroom sessions). For each session, pre-work is required to prepare students for the upcoming session. Following each session, post-assignments require students to utilize the information covered in the previous session. Each student is assigned to a group and provided a mentor with whom he/she communicated throughout the course. The course ran from June 4, 2018 through October 18, 2018, crossing over fiscal years 2018 and 2019. A full report of the evaluation findings is available in the appendices.

Fifty-one students began the course in June. Table 8 below shows that a range of public health practitioners took the course, but the majority were in director (n=10) or coordinator (n=23) positions.

Table 8. Professional Role of Trainees (n=51)	#	%
Administrative Assistant	1	2.0%
Administrator/Clerk	7	13.7%
Local Health Director/Agent	10	19.6%
Environmental Health Inspector/Specialist/Sanitarian	2	3.9%
Program Manager	4	7.8%
Public Health Coordinator	23	45.1%
Public Health Nurse	4	7.8%

Trainees came from all HMCC regions of the state, but most were from regions 4AB and 4C (See Table 9).

Table 9: HMCC Regions of Trainees (n=50)	#	%
Region 1: Western MA	3	6.0%
Region 2: Central MA	1	2.0%
Region 3: Northeastern MA	3	6.0%
Region 4AB: Metro West	12	24.0%
Region 4C: Boston	29	58.0%
Region 5: Southeastern MA	2	4.0%

A total of 46 completed all requirements and graduated in October, a 92.1% completion rate. The evaluation findings indicate that most trainees were satisfied with the course overall, as well as with specific aspects of the course. Most trainees believe the training improved their understanding of the course's subject matter; the pre/post-test results also indicate that the course was effective at improving trainee knowledge. Most trainees identified actions to apply what they learned in their jobs and many named specific aspects of the course that they considered effective and meaningful.

Six recommendations were made to the LPHI management team based on the findings:

1. Review the list of additional training needs expressed by trainees to assess whether there are ways to meet the identified needs of trainees.
2. Explore the specific suggestions made related to the evaluation and managing budgets sessions to see if they can be accommodated.
3. Ensure mentors are introduced early in the course and clearly identified in the sessions. Also explore ways in which the guidance mentors provide related to weekly discussions can be increased.
4. Determine the desired threshold for satisfaction with instructors and follow-up with those whose ratings fell below the standard to address the specific issues where improvement can be made.
5. Consider polling participants to assess their baseline knowledge/experience with various topics to help instructors plan their sessions.

6. Review suggestions for increasing interaction among trainees and determine which, if any, are feasible.

LPHI will consider how to address this feedback during FY2020, if funds are available to offer the course again.

5. Emergency Risk Communications in Practice

The LPHI offered two sessions on emergency risk communications in practice (ERCIP) in FY19. Twenty-nine people attended the February 2019 training and 13 participated in the May training. Because a detailed report of findings was not created for this training, all of the available evaluation findings are provided below. Table 10 shows the HMCC region of the ERCIP participants. The February 2019 training was offered specifically for Region 1, with registration opened to other regions closer to the training date. 100% of those trainees were from Region 1. The May 2019 training was offered in the metro Boston area, but open to and marketed to all HMCC regions. May trainees came from MDPH (7.7%), Region 4AB (69.2%) and Region 2 (23.1%).

Table 10. Regional representation of ERCIP Participants	**Feb**	**n=29**	**May**	**n=13**
	#	%	#	%
Region 1	29	100%	0	0.0%
Region 2	0	0.0%	3	23.1%
Region 3	0	0.0%	0	0.0%
Region 4AB	0	0.0%	9	69.2%
Region 4C	0	0.0%	0	0.0%
Region 5	0	0.0%	0	0.0%
MDPH	0	0.0%	1	7.7%

Just over half of the February session attendees were public health nurses health (31%) and directors/agents (20.7%). In May, the majority of attendees selected the "other" category to describe their role (61.5%).

Table 11. Roles of ERCIP Participants	**Feb**	**n=29**	**May**	**n=13**
	#	%	#	%
BOH Member	3	10.3%		0.0%
Local Health Director/Agent	6	20.7%	1	7.7%
EH Inspector/Specialists/Sanitarians	4	13.8%		0.0%
Inspectional Services & other depts.		0.0%	1	7.7%
Other		0.0%	8	61.5%
Public Health Coordinators	2	6.9%		0.0%
Public Health Nurse	9	31.0%		0.0%
Public Safety	5	17.2%		0.0%
Social Services		0.0%	3	23.1%
Other: MRCs, PIO, Media Relations				

As shown in Table 12, most (between 96.3% and 100%) of participants who completed the evaluation agreed or strongly agreed that their understanding of the subject matter improved as a result of training, the information was presented clearly, they were satisfied with the training, and the learning objectives were met.

Table 12. ERCIP Trainees agreement (agree/strongly agree) with statements about the training	**Feb**	**(n=27)**	**May**	**(n=12)**
	#	%	#	%
1. My understanding of the subject matter has improved as a result of having participated in this training.	26	96.3%	12	100.0%
2. I have identified actions I will take to apply information I learned from this training in my work.	27	100.0%	12	100.0%
3. The information was presented in ways I could clearly understand.	27	100.0%	12	100.0%
4. I was satisfied with this training/course overall.	26	96.3%	12	100.0%

Improvements from pre-test to post-test were seen in both cohorts, suggesting that participants' knowledge about the subject matter increased as a result of training (see Table 13).

Table 13. Mean and range of pre and post-test for ERCIP FY19 cohorts	**Feb**	**n=29**	**May**	**n=13**
	Average	Range	Average	Range
Pre-test	57.9	40-80	67.7	50-90
Post-test	84.1	60-100	96.1	80-100

The majority (between 89.3% and 100%) of ERCIP participants that provided ratings for their instructors agreed or strongly agreed that their instructors were well-prepared, knowledgeable, enthusiastic, easily understood, and that they encouraged questions and class participation (See Table 14).

Table 14. ERCIP Instructor Ratings	**Feb**	**(n=28)**	**May**	**(n=12)**
Instructor Seth Eckhouse was	#	%	#	%
Well-prepared	28	100.0%	12	100.0%
Knowledgeable	28	100.0%	12	100.0%
Enthusiastic	28	100.0%	12	100.0%
Easily understood	27	96.4%	12	100.0%
Encouraged questions and class participation	28	100.0%	12	100.0%
Instructor Ashley Miller was	#	%		
Well-prepared	27	96.4%		
Knowledgeable	27	96.4%		
Enthusiastic	27	96.4%		
Easily understood	25	89.3%		
Encouraged questions and class participation	27	96.4%		

Three participants offered comments on the course and indicated that training was interactive and engaging and another described the exercise as helpful for pulling the course content together. The

third added that the presentation was great, well-paced, and had the right amount of content for a one-day training. The evaluation findings and comments indicate that the training was effective at Kirkpatrick levels 1 and 2.

7. Tobacco Policy Training

A new tobacco policy webinar, created and launched in FY19, entitled "Restricting Flavored Tobacco Products to Adult-Only Retail Tobacco Stores" was accessed 78 times by 52 unduplicated users. The vast majority (between 90.9% and 100%) of webinar participants agreed or strongly agreed with statements about the webinar that suggest they were satisfied with the presentation, content, and training overall; intend to use the content in their work; and believe the webinar improved their understanding of the topic (See Table 15). The webinar is being incorporated into the OYT model and will be available for continuing education credits in FY20.

Table 15. Trainee agreement (agree/strongly agree) with statements about the tobacco policy webinar	**#**	**%**
I have identified actions I will take to apply information I learned from today's training to my work	30	90.9%
The information was presented in way I could clearly understand	33	100.0%
My understanding of subject matter improved as a result of having participated in today's training	32	97.0%
I was satisfied with today's training overall	33	100.0%

D. Communications and Marketing

The LPHI began implementing its new marketing and communications plan in FY19 and will continue implementation over the next fiscal year to achieve the outcomes of: *(1) Increased awareness of the LPHI and its programs; and (2) Increased registration for LPHI trainings.* To inform the development of this plan, the LPHI disseminated a communications survey via email to all enrolled participants in LPHI courses since inception. Of those who received the email with the survey link, 1,260 opened the email and 352 responded to the survey. The survey inquired about communication preferences.

Example of tailored training card

In FYI9, LPHI staff attended and exhibited at three local public health conferences: The Yankee Environmental Conference and the annual conferences of MAPHN and MHOA. At the exhibit booths, the LPHI made available to conference participants training cards that list groupings of trainings that increase skills/knowledge in each of the following: emergency preparedness, environmental health, population health, and health promotion and health equity. The exhibitions also featured marketing materials on the Emergency Preparedness Certificate, Public Health Core Certificate, the Virtual House (part of MAPHIT Housing), and a list of the OYT courses. The LPHI staff attended two regional meetings

of MAPHN to present on educational opportunities for public health nurses and also distributed information on LPHI educational opportunities at seven other live training events.

Following completion of the new marketing and communications plan, the LPHI produced and disseminated one newsletter to over 6,500 local public health practitioners in MA and across New England in FY19 using its newly updated distribution list. The newsletter described LPHI training and featured a "Summer is coming; are you ready?" campaign to raise awareness of topics of particular importance to the workforce during the summer months. The newsletter also promoted the tobacco policy webinar, MAPHIT Housing, ERCIP, and trainings available through NEPHTC, DelValle, and the Centers for Disease Control and Prevention of benefit to local public health practitioners. Available analytics for the newsletter show that 22% of recipients opened the email that contained the newsletter. Following an email blast that went out to the workforce to promote the tobacco policy webinar, webinar registration increased from 20 participants to 80. In FY 2020, the communications plan calls for seasonal distribution of newsletters, as well as single course and audience specific marketing communications as noted in the recommendations below. The LPHI will monitor user engagement with the newsletters and determine if that schedule is appropriate for the audience.

The LPHI also curated two "at a glance" calendars which show a full year of activities, including those of the LPHI, CLPH organizations, as well as various state and federal conferences, OLRH, and OPEM. These calendars are available on the LPHI website and updated regularly as new opportunities become available.

IV. Conclusions and Recommendations

FY19 was a productive year for the LPHI. The LPHI engaged in productive partnerships, began planning for the next iteration of public health leadership development and Public Health 3.0, responded to recommendations that came out of the FY17 needs assessment, conducted regular marketing of the LPHI and its offerings to the target audience, and delivered training to roughly 2,000 individuals that addressed all 17 program areas, 10 cross-cutting, and four emergency preparedness competencies. Based on the findings presented in this report, there are a few recommendations the LPHI program manager should consider over the next year:

1. The LPHI should consider conducting additional marketing of the OYT trainings to practitioners in HMCC Regions 1 and 3 (where utilization was lowest) and, as part of future needs assessment efforts, ensure that the constellation of OYT trainings meet the needs of practitioners in those regions.
2. The LPHI should build upon the modest increase in BOH members who used OYT trainings in FY18 by conducting additional marketing about the availability and value of these trainings to BOH members.
3. With regard to MAPHIT, the LPHI should review the detailed feedback in the full evaluation report, particularly about the virtual house, and address the identified challenges. LPHI may also want to extend the time in which MAPHIT requirements must be completed, send periodic reminders to trainees, and implement steps to increase the availability of field trainers so that it is possible for more individuals to complete all aspects of the training. In 2020, LPHI should review data on field inspections again to ascertain whether the 2018 and 2019 cohorts were satisfied with the field inspection component of the program.
4. For the Management Course, the LPHI should consider whether it is feasible to meet the identified training needs of trainees (i.e., fiscal/budget issues, supervision and staff

development, and interagency collaboration); address the recommendations raised by trainees about the evaluation and managing budgets sessions; and incorporate suggestions to increase interaction among trainees (e.g., a community of practice). LPHI should take steps to ensure mentors are introduced early in the course and clearly identified in the sessions and explore ways to increase the guidance mentors provide related to weekly discussions. A desired threshold for satisfaction with instructors should be established and then LPHI management should follow-up with those whose ratings fell below the standard to address the specific issues where improvement can be made. It may also be useful to poll participants to gather baseline data on their knowledge/experience with various topics to help instructors plan their sessions.

5. Finally, the Special Commission on Local and Regional Public Health issued its final report in June 2019. Implementation of the recommendations in the report will result in increased demand for access to existing training on delivery of public health standards. The LPHI should continue to be responsive to the training needs of the public health workforce as these recommendations are implemented, and prepare to address future training needs when the Commonwealth adopts a Foundational Public Health Services standard.

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APPENDICES

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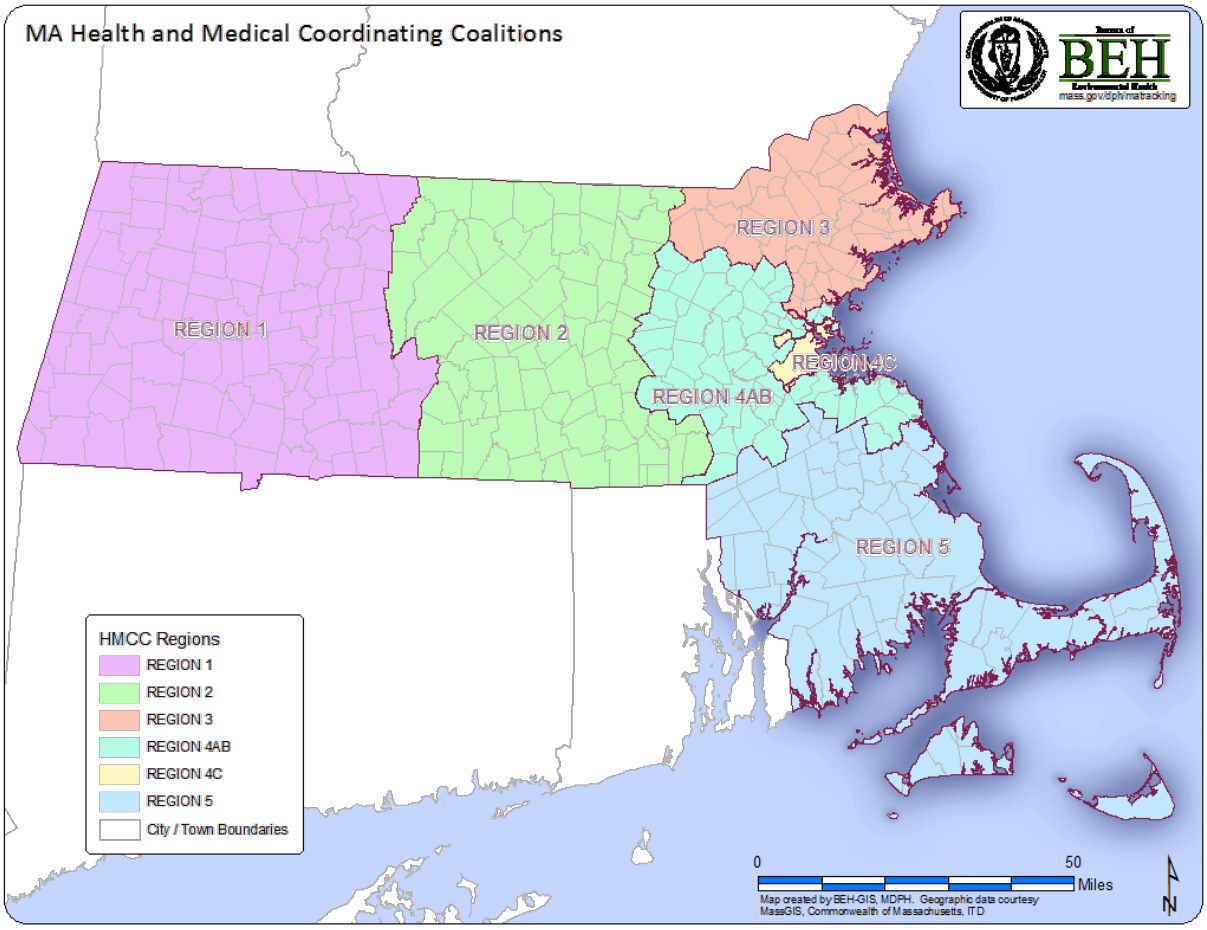
Appendix A: Local Public Health Institute (LPHI) of Massachusetts Logic Model

Mission: To provide and ensure a competent workforce by strengthening and sustaining the capacity of local boards of health to prepare for and respond to public health issues and emergencies and to promote the health of residents of the Commonwealth.

Problems/resources	LPHI objectives	Outputs	Short-term outcomes		
A group of individuals that understands the needs of local public health and that represents various segments of the workforce and geographic areas of the Commonwealth is needed to advise MDPH and others (e.g., DEP, MEMA) about how to most effectively achieve the LPHI mission.	Rebuild and convene a highly functioning Advisory Committee	✓ # of associations represented ✓ # of regions represented ✓ # of academic partners represented ✓ # of meetings ✓ Production/adoption of operating principles	Strengthened partnerships among public health and academic partners to ensure that LPHI trainings and programs are aligned with the learning priorities of the LPH workforce and are of high quality.	Primary level Outcome: Improved cross-cutting, program area and emergency preparedness competencies among the local public health workforce who have received training from the LPHI.	Secondary Level Outcome: Improved agency performance in areas related to competencies in which agency personnel have been trained by the LPHI.
The LPH workforce may not possess the capabilities needed to prepare for and respond to emerging public health issues and emergencies. Training is needed to ensure the LPH workforce has the competencies necessary to protect the health of MA residents.	Provide training courses and education programs on PH and EP competencies	✓ # of trainings and programs ✓ # of competencies covered in trainings/programs ✓ # of registrants and # of participants (total, by region, role)	Increased numbers of LPH workforce members trained on cross-cutting, program area and emergency preparedness competencies		
In order to use the available resources effectively and provide the LPH workforce with needed training, we must understand their training needs, assess which trainings are available to meet their needs, and develop training to address the gaps.	Assess workforce competencies and training needs	✓ Completed first draft of competency report ✓ Completed gap analysis and inventory of available trainings	Improved understanding of the trainings needs of LPH and the trainings that exist and those that are needed.		
To maximize resources, we should collaborate with others who have a vested interest in strengthening the LPH workforce	Build partnerships	✓ # of partners and collaborative projects	Increased educational offerings and collaborative projects		
Geographic distances, staffing shortages at the local level, and scheduling challenges present significant obstacles when it comes to accessing classroom training. Tremendous technological resources exist that will enable the LPHI to address these obstacles by offering a more convenient avenue for training using web-based technology. The LPHI should determine appropriate uses for distance education and increase its use accordingly.	Increase capacity for distance education	✓ # of trainings or programs with a distance education component	Increased participation in LPHI offerings across all regions		
Although the LPHI offers tremendous opportunities for improving the skills and knowledge of the LPH workforce, too few people know about the LPHI or its offerings. The LPHI needs an effective communications and marketing plan to address this problem.	Have an effective communications and marketing plan	✓ A developed plan for marketing the LPHI and its offerings ✓ Explore incentives for training ✓ # of newsletters and calendars	Increased awareness of the LPHI and its programs Identify and utilize incentives when feasible Increased registrations for LPHI trainings		

APPENDIX B


MA Health and Medical Coordinating Coalitions
BEH
mass.gov/dph/matracking
REGION 1
REGION 2
REGION 3
REGION 4AB
REGION 4C
REGION 5
HMCC Regions
REGION 1
REGION 2
REGION 3
REGION 4AB
REGION 4C
REGION 5
City / Town Boundaries
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50
Miles
Map created by BEH-GIS, MDPH. Geographic data courtesy
MassGIS, Commonwealth of Massachusetts, ITD
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The Local Public Health Institute of Massachusetts
FY2019 Annual Report

Appendix C
Crosswalk of Professional Roles of those using LPHI Trainings

LPHI Professional Role Options:	Categorized as:
Admin Assistant	Public Health
Administrator/Clerk	Public Health
BOH Member	Public Health
Local Health Director/Agent	Public Health
EH Inspector/Specialists/Sanitarians	Public Health
Healthcare	Other
Inspectional Services & other depts.	Public Health
MDPH	Public Health
Other	Other
Private Industry	Private Industry
Program Managers	Public Health
Public Health Coordinators	Public Health
Public Health Nurse	Public Health
Public Safety	Other
School Nurse	Other
Social Services	Other
Students	Students

APPENDIX D

Local Public Health Institute of Massachusetts Integrated Marketing and Communications Plan

REVISED June 4, 2019

INTRODUCTION

The recent survey of current and potential LPHI customers identified two possible roadblocks to increased participation in trainings:

- Low awareness of LPHI and the broad range of available trainings;
- Difficulty locating trainings on the LPHI website.

The survey also validated comments we heard during 1:1 interviews—that current users and professional associations have the potential to be our most effective champions and communications channels.

This streamlined, resource-efficient plan has been designed to achieve three key goals:

- Expand awareness with potential customers;
- Deepen the relationship with current customers;
- Engage current customers and professional associations as active advocates for LPHI.

In conjunction with this plan, we will also be making improvements to the user experience on the LPHI site, to ensure that once a current or potential customer reaches the site, they can quickly and easily find what they need.

Outlined below are quantifiable measures of success. We recommend revisiting the plan at six-month intervals to track these metrics, revising as necessary.

KEY SUCCESS METRICS	BASELINE	6 MONTH	12 MONTH	18 MONTH
Web traffic Email opens Email clicks Email list Course registration Courses per user Referrals New users				

UPDATED MESSAGING

Mission
To improve public health and preparedness capabilities and the health of the residents of the Commonwealth by creating, implementing, and sustaining workforce development activities for local public health and other public health system partners.

Elevator pitch (spoken answer to the question: What is LPHI?)
The Local Public Health Institute of Massachusetts is a comprehensive, centralized resource for public health trainings that address the goals of Public Health 3.0.

Brand proof points (answers to the question: Why* LPHI?)
** support, join, partner with, learn from, work for*

- **Relevant:** Our ongoing collaboration with a broad range of public health partners ensures that the trainings contain the most up to date information, taught by experts, on topics of current and future interest to public health professionals. Many of the trainings include information specific to Commonwealth of MA regulations.
- **Comprehensive:** The course catalog is broad, deep, and designed for a variety of experience levels, but especially for those new to the field
- **Accessible:** Trainings are available in a variety of formats to meet the diverse needs and learning styles of a range of participants
- **Effective:** Participants report high levels of satisfaction and improved knowledge

ACKNOWLEDGEMENT LANGUAGE
OPEM:
This training was supported by the Massachusetts Department of Public Health (MDPH) with funds made available by the Cooperative Agreement Number TP921913, funded by the Centers for Disease Control and Prevention. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention or the Department of Health and Human Services.
HRSA A (Years 2011-2013)
Acknowledgement: This project is/was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number *UB6HP20150* "Public Health Training Center". This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.
HRSA 1 (2014-2018)
Acknowledgement: This project is/was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number *UB6HP27877* "Regional Public Health Training Center Program." This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS or the U.S. Government.

AUDIENCE SEGMENTATION

We have a diverse set of potential audiences, and limited resources with which to reach them. In situations like this, it's important to define our audience segments, prioritize our most promising and important segments, then message and market by segment. From an infrastructure point of view, we also need to maintain a clean, current database and build that database by capturing contact information (email addresses) through as many channels as possible.

ASSOCIATIONS	
CURRENT USERS	NEW USERS
Public Health Nurses	Public Health Nurses
Inspectors/Sanitarians	Inspectors/Sanitarians
BOH Agents or Directors	BOH Agents or Directors
BOH Members	BOH Members
MRC/HMCC's	MRC/HMCC's

CORE TOOL KIT

We are in the process of creating a streamlined tool kit that can easily be used by the LPHI team to maintain a steady, productive stream of communications with target audiences. Planned contents include:

- Electronic newsletter template
- Eblast template
- Postcard template (for posting at local offices)
- Trifold brochure
- Business card

Additional recommended tools include:

- Template for a digital ad associations could add to their own newsletters and websites

RECOMMENDED APPROACH

Expanding awareness with potential customers

As we know, potential customers are challenging to reach, and we are often forced to connect with them through intermediaries (peers, associations, senior leaders, etc). In the "engaging current customers" section (below) we address ways to better leverage those intermediaries. In addition, there are some ways we can expand awareness more directly. For instance, almost 40% of survey participants indicated that they obtain information about professional development opportunities via online search. We could pilot a program that blends paid search and digital advertising to ensure a stronger online presence for LPHI (current searches under "public health training" and "public health professional development" do not serve up LPHI in the first four pages of a Google search).

Deepening the relationship with current customers

It's clear that current customers understand the value that LPHI delivers to them, and to their colleagues. But it's not clear that they understand the full depth and breadth of LPHI's offerings. In order to maintain and expand the relationship with current customers, we recommend re-introducing the newsletter, supplemented by topic-specific eblasts. For instance, the monthly or quarterly newsletter could outline all trainings for the next quarter, and an eblast would be sent a few weeks before each training to drive registration for that training. In addition, if resources allow, a followup email should go to each training attendee, thanking them for attending, encouraging them to help spread the word, and perhaps reminding them of other, related trainings that they might be interested in.

Engaging current customers and professional associations as active advocates for LPHI

Given the fact that 91% of survey respondents are "likely or very likely" to recommend LPHI for a colleague, we recommend a more active referral program. Realizing that resources are limited, it will be important to keep the program simple. It could be as straightforward as offering discounts for additional attendees on a single registration, and/or encouraging email recipients to share the newsletter with a colleague. The referral program could be promoted via direct mail letter + postcard to the 351 BOH statewide, with a followup email reminding them to post the card on their bulletin board and share other LPHI communications with colleagues.

Three organizations—*MA Association of Health Boards, MA Environmental Health Association and MA Health Officers Association*—were most mentioned as sources of information on professional development opportunities. By providing them with ready to use content and "ads" for their websites and newsletters, we can help them help us reach their constituents, thereby expanding our reach dramatically. We can also take advantage of opportunities to flyer/table at their conferences, meetings, and workshops.

Finally, if resources permit, we discussed the possibility of presenting once a year in each region (content TBD) to both build awareness for LPHI, and help connect practitioners in that region.

To come:

Newsletter content plan (ML working with Seth)

Audience segmentation – messaging and marketing channels

Additional questions:

How can we target people who are new to public health? People who are switching focus areas?

How can we address geographic disparities?

The Impact of the Public Health Core Certificate on Participants' Workplace Performance
FY 2019

APPENDIX E

Background and methodology:

The Local Public Health Institute (LPHI) of Massachusetts offers the "Public Health Core," a training certificate program comprised of 10 On Your Time training modules: (1) Orientation to Public Health in MA; (2) Public Health Law and Legal Issues in MA; (3) Emergency Preparedness in MA; (4) Food Protection for Regulators; (5) Housing; (6) Nuisance and Abatement; (7) Disease Case Management; (8) Health Promotion and Health Equity; (9) Immunization; and (10) Surveillance of Infectious Diseases. The first three must be completed first; the rest can be completed in any order. All ten trainings are available on-line, 24/7, and can be taken at the trainee's own pace, but must be completed within five years of application to earn the certificate and a score of 90% or better is required on the training post-tests. Enrollment is free, and available by going to the Certificates page of the LPHI website. The Public Health Core is intended for staff and board members of local boards of health or health departments who are new to the field of governmental public health or lack formal public health education, and for those who want a refresher course.

In April of 2019, the LPHI evaluator launched an online survey to assess the longer-term impact of the training on those who completed it, specifically whether and how the Public Health Core had influenced their performance in the workplace. Participants were asked to provide information about their role, the Health and Medical Coordinating Coalition (HMCC) Region in which they work, and the number of years they have worked in governmental public health. Additionally, using a Likert Scale (Strongly Disagree to Strongly Agree), survey respondents were asked to indicate their level of agreement with seven statements about the impact of the course on their confidence, knowledge, and workplace performance. They were also asked to review a list of public health roles and to indicate, of those that they perform in their work, which they believe they perform or address better (i.e., more efficiently and/or effectively) as a result of having completed the public health core. Finally, participants were asked to indicate other ways in which the training has influenced their job performance and whether there was anything they wished the training had addressed that it did not. Quantitative data were analyzed in Excel and qualitative data were reviewed for common and divergent themes.

Findings: Since the launch of the Public Health Core in March of 2016 , 68 people have completed all program requirements. Twenty-six of them (38%) completed the online survey. As shown in Figure 1, survey respondents perform diverse public health roles. Over one-third (34.62%) are public health nurses.

Figure 1. Professional roles of Survey Respondents (n=26)

Roles:	#	%
Administrator	1	3.85%
Board of Health Member	1	3.85%
Local Health Director	1	3.85%
Local Health Agent	4	15.38%
Environmental Health Inspector/Specialist/Sanitarian	2	7.69%
Program Manager	0	0.00%
Public Health Coordinator	0	0.00%
Public Health Nurse	9	34.62%
State/MDPH employee	0	0.00%
Other*	8	30.77%

*Other = emergency preparedness planners; educator, intern, private industry

Survey respondents represent all Health and Medical Coordinating Coalition (HMCC) regions of Massachusetts except for region 4C. Over half of respondents 53.84% come from two regions: 1 and 5 (See Figure 2)

Figure 2. HMCC Region of Survey Respondents (n=26)

	#	%
1= Western MA	7	26.92%
2= Central MA	1	3.85%
3= North MA	3	11.54%
4AB= Metro Boston	5	19.23%
4C= Boston	0	0.00%
5= South Shore, Cape and Islands	7	26.92%
Don't know	1	3.85%
Other*	2	7.69%
***Other = Canada, Texas**		

Survey respondents have worked in governmental public health for an average of 7.84 years with a range of less than one year to 27 years.

Figure 3 below shows that the vast majority (88.5% or more) agree (i.e., agree or strongly agree) that, as a result of completing the Public Health Core, they have a better understanding of the breadth of what public health addresses and learned about aspects of public health with which they have little or no experience; feel more confident about their knowledge of public health and that their approach to their work is effective; and that they can be more helpful to staff and colleagues, the public and/or media, and superiors and/or other public officials.

Figure 3. Agreement (agree/strongly agree) with statements about the training

Statements:	n	#	%
I have a better understanding of the breadth of what public health addresses as a result of completing the Public Health Core.	26	25	96.2%
As a result of the Public Health Core, I learned about aspects of public health about which I had little or no experience.	26	23	88.5%
Now that I have completed the Public Health Core, I feel more confident about my knowledge of public health.	26	25	96.2%
Now that I have completed the Public Health Core, I feel more confident that my approach to my work is effective.	26	24	92.3%
I can be more helpful to my staff and/or colleagues as a result of having broadened my knowledge of public health in the Public Health Core.	26	24	92.3%
I can be more responsive to the public and/or media as a result of having broadened my knowledge of public health in the Public Health Core.	26	24	92.3%
I can be more responsive to requests from my superiors and/or other public officials as a result of having broadened my knowledge of public health in Public Health Core.	26	24	92.3%

At least 75% of respondents indicated that they perform/address seven aspects of their work better as a result of the training: food protection, housing, nuisance control and abatement, emergency preparedness, health promotion, public health law/legal issues, and health equity. Half or more also believe they perform or address disease case management, infectious disease surveillance, and immunizations better as a result of having completed the Public Health Core (See Figure 4).

Figure 4. Aspects of the job performed/addressed better as a result of the training

	n	#	%
Public Health Law/Legal Issues	14	11	78.6%
Emergency Preparedness	23	20	87.0%
Food protection	16	15	93.8%
Housing	16	15	93.8%
Nuisance control and abatement	15	14	93.3%
Disease case management	18	13	72.2%
Infectious disease surveillance	19	13	68.4%
Immunizations	14	7	50.0%
Health promotion	21	17	81.0%
Health equity	18	14	77.8%

Seven respondents offered comments and indicated that the Public Health Core provided them with a good overview of public health, helped them to become familiar with content with which they were not familiar, and allowed them to earn an additional credential. Three offered the following comments.

> *"While there are several topics covered that are not specifically related to my role, I feel that having acquired a basic understanding in these topics enables me to better address preparedness concerns for people who work in these areas, enabling me to do a better job overall."*

> *"For an entry level program, it was very user friendly, and successfully breaks the information down in an easy to understand yet informative platform."*

> *"As a B.O.H. member, the material I read and studied not only helped me greatly increase my understanding of and about public health, but by the material being able to be accessed in my account as needed, it has helped my confidence to know that I can go back and refresh my knowledge of the material any time I need to in able to be better able and prepared to serve my community of Winchendon, MA."*

Participants were also asked if there was anything they wished the Public Health Core had covered that it did not. One person indicated that he/she would have liked it to cover grant writing. Another described the online platform as needing improvement, stating that it does not allow users to start and stop where they left off and that logging on and getting to the correct module or page was challenging. A third participant explained that an online manual of the course materials would be helpful.

Conclusions and recommendations: The survey results indicate that the Public Health Core has had a positive impact on the knowledge, confidence, and ability of respondents to perform their jobs. Respondents believe they are more helpful and responsive to their public health colleagues and a range of other stakeholders and that they perform or address several aspects of public health better as a result of training.

Course administrator should review the feedback from those who offered suggestions for improving the course to assess whether/how their comments can be addressed (e.g., online platform challenges and desire for an online manual of course content and content on grant writing).

Emergency Preparedness Certificate Program Evaluation Results
April 2019

APPENDIX F

Background and Methodology:

The Local Public Health Institute (LPHI) of Massachusetts, in conjunction with the Office of Preparedness and Emergency Management (OPEM) of the Massachusetts Department of Public Health, offers an Emergency Preparedness Training Certificate for staff and volunteers from municipal or state agencies across Massachusetts who are responsible for public health emergency preparedness and response activities. The Certificate is a bundle of 15 individual trainings that cover an array of Emergency Preparedness topics (See Figure 1 below). All required trainings are available on-line, 24/7, and can be taken at the trainee's own pace. All but four courses are hosted by the LPHI; the others are hosted by the Federal Emergency Management Agency and the University of Washington. Enrollment is free, and available by going to the EP Training Certificate Enrollment page of the LPHI website.

Figure 1. Emergency Preparedness Training Certificate Trainings, Trainings Hosts, and Hours Required

Training	Hosted by	# of hours to complete
1. Community Preparedness: Awareness Level	LPHI	1
2. Community Recovery: Awareness Level	LPHI	1
3. Dealing with Stress in Disasters: Building Psychological Resilience	LPHI	2
4. Emergency Preparedness in MA and the Role of Local Public Health	LPHI	1
5. HHAN: Using the Health and Homeland Network	LPHI	.5
6. Emergency Dispensing Site Management	LPHI	1
7. Environmental Health and Disease Surveillance in Shelters	LPHI	2
8. Surveillance of Infectious Diseases	LPHI	2
9. Insolation and Quarantine	LPHI	2
10. Incident Command System and Public Health	LPHI	2
11. Public Health Workforce Protection	LPHI	1
12. IS-100 Introduction to Incident Command System (ICS)	FEMA	3
13. IS-700 National Incident Management System (NIMS), an Introduction	FEMA	3
14. IS-800.b National Response Framework (NRF), an Introduction	FEMA	3
15. Emergency Risk Communication for Public Health Professionals	Univ. of WA, NW Ctr. for Public Health Practice	2.5
	TOTAL:	27

Once all 15 trainings have been completed and verified, trainees are given access to a culminating two-part exam; part one has 27 questions and part two has 19. They are asked to evaluate the program by using a Likert Scale (1=strongly disagree to 5=strongly agree) to indicate their level of agreement with five statements about the training. Trainees are asked to indicate (true/false) whether they will apply the training to a state or local certification and to provide open-ended feedback about their experience and how the program can be improved, as well as to identify other training topics of interest to them. In the spring of 2019, the LPHI

evaluator reviewed the available data.[2] The evaluation findings are provided below followed by conclusions and recommendations.

Findings:

Since the launch of the Certificate Program in June of 2017, 13 people have completed all program requirements, including the evaluation components. As shown in Figure 2 below, the majority (84.6% or more) agreed or strongly agreed that their understanding of the subject matter improved as a result of the trainings, they identified actions they would take to apply the information they learned in their work, the information was presented clearly, they were satisfied with the course overall, and the learning objectives were met by the training.

Figure 2. Agreement (agree or strongly agree) with statements about the training (n=13)

	#	%
My understanding of the subject matter has improved as a result of having participated in this training.	12	92.3%
I have identified actions I will take to apply information I learned from this training in my work.	11	84.6%
The information was presented in ways I could clearly understand.	12	92.3%
I was satisfied with this course overall.	12	92.3%
The learning objectives were met by this training.	12	92.3%

Eight (61.5%) of those who completed the program indicated that they will apply the training to a state or national certification.

On part one of the test, the average test score was 86.7 with a range of 59.6 to 100. On part two of the test, the average score was 90.5 with a range 48.3 to 100. Eleven of the 13 trainees achieved a score of 70 or better[3] on both parts of the test, whereas two trainees scored less than 70 on one or both.

Six participants offered open-ended feedback about the course. Two expressed their satisfaction with the course, with one stating that it is a well-designed course and should be advertised more broadly to the public health community with emphasis on the fact that it can be completed over time. Two participants indicated that there were errors in the exam and that some questions appear to offer more than one possible correct answer among the multiple-choice options provided. One trainee suggested that more quiz questions should be provided throughout the 15 trainings. Another suggested integrating more case studies and interactive scenarios in some of the training modules.

Five trainees described other trainings they would like to receive, including:

- More on workforce protection,
- Response to attacks on food supplies,
- All aspects of healthcare preparedness,

[2] Individual LPHI trainings also involve evaluations, including pre/post quizzes and satisfaction measures. Those data will be reviewed and analyzed in a future evaluation of LPHI's On Your Time trainings.
[3] 70 is the threshold the LPHI and evaluator typically use to establish a "passing" grade

- Standardized awareness training (SAT),
- Training on chemical, biological, radiological, nuclear, and explosive (CBRNE) hazards and materials, and prevention and deterrence methods, and
- Refresher trainings, including an advanced class and/or more scenario training.

Conclusions and Recommendations:

The evaluation results indicate that the Emergency Preparedness Certificate Program has been successful at increasing trainees' knowledge about emergency preparedness topics. Those who've completed the certificate program to date are satisfied with the training and most will apply the training to a state or national certification.

Based on the open-ended feedback provided by some trainees, the LPHI should:

- Ensure broad marketing of the course to public health practitioners and highlight that it can be completed over time;
- Thoroughly proof-read the exam for errors and review test questions to fix those that offer more than one plausible correct answer;[4]
- Consider whether and where to add quiz questions and integrate case studies and interactive scenarios in the individual trainings; and
- Review the additional training topics of interest to trainees to determine whether and which could be offered to the public health workforce.

[4] To identify the questions that caused the greatest confusion for trainees, the course administrators should review correct/incorrect responses to individual test questions. Those with the greatest number of respondents answering incorrectly are likely the ones where answers options were confusing to test takers.

APPENDIX G

I. Background and methodology:

MAPHIT Housing is designed for health and housing inspectors charged with enforcement of the state sanitary codes 105 CMR 400 and 410: General Administrative Procedures and Minimum Standards of Fitness for Human Habitation. The program begins with prerequisite online modules (self-paced and completed before the classroom training starts) then three days of classroom training. These components are then followed by an online virtual house inspection and five supervised field training inspections. In the final phase, trainees complete an online final assessment which requires trainees to answer a three-section quiz about inspection processes and required documentation (inspection report and correction order). The online final assessment is graded (pass/fail) and the students must take the sections in order.

Those who successfully complete classroom training receive contact hours towards CHO, RS and RN certifications, and those who successfully complete all components of the program are issued a certificate of completion. Although a cohort of trainees begins the program at the same time, individuals may complete the field inspection and assessment portions of the program on different timelines. Therefore, the trainees within a given cohort may not all complete the program at the same time. Additionally, some trainees, generally those who don't actually conduct inspections but who need knowledge about the laws and regulations, don't proceed beyond the classroom training. It generally takes six to twelve months to complete the entire program with a two-year maximum allowed.

The MAPHIT Housing program was offered twice in 2018. Figure 1 below shows the number of participants that completed the classroom training, virtual house inspection, and field training in 2018. Figure 2 shows the number of individuals who have completed the final assessment from the 2017 and 2018 cohorts as of January 2019. Figures 3 and 4 show the regions in which those trainees work and their professional roles, respectively.

Figure 1. Number of 2018 trainees completing MAPHIT Housing components

MAPHIT Housing Program Components	May 2018 (n)	December 2018 (n)
Classroom Training	31	27
Virtual House Inspection	14	7
Field Training	3	0

Figure 2. Number of 2017 and 2018 trainees completing the final assessment

Cohort	May 2018 (n)
May 2017	7
December 2017	10
May 2018	3
December 2018	0

The trainees came from all of the Health and Medical Coordinating Coalition (HMCC) regions of Massachusetts except 4C (Boston).

Figure 3. HMCC Regions in which trainees work

Region:	May (n)	May (%)	Dec (n)	Dec (%)
Region 1	2	6.5	16	43.2
Region 2	5	16.1	3	11.1
Region 3	5	16.1	1	3.7
Region 4AB	10	32.3	5	18.5
Region 4C	0	0	0	0
Region 5	8	25.8	2	7.4
State	1	3.2	0	0
TOTAL:	31	100	27	100

In both cohorts, and as one might expect given the nature of the MAPHIT Housing Certificate Program, the majority of the trainees are environmental health inspectors, specialists, and/or sanitarians or in inspectional services and other departments.

Figure 4. Role of MAPHIT Housing Trainees

Role:	May (n)	May (%)	Dec (n)	Dec (%)
Administrative Assistant	0	0	1	3.2
Administrator/Clerk	0	0	0	0
BOH Member	0	0	0	0
Local Health Director/Agent	4	14.8	5	16.1
Environmental Health Inspector/Specialists/Sanitarians	21	77.7	15	48.4
Healthcare	0	0	0	0
Inspectional Services & other depts.	0	0	8	25.8
MDPH	0	0	0	0
Other	0	0	0	0
Private Industry	0	0	0	0
Program Managers	1	3.7	1	3.2
Public Health Coordinators	0	0	0	0
Public Health Nurse	1	3.7	1	3.2
Public Safety	0	0	0	0
School Nurse	0	0	0	0
Social Services	0	0	0	0
Students	0	0	0	0
TOTAL:	27	100	31	31

To evaluate the training, the MAPHIT Evaluator employs the Kirkpatrick Training Evaluation Model,[1] which suggests that training should be evaluated on four levels to understand satisfaction, knowledge gains, impact on workplace performance, and impact on health outcomes. The table below describes the MAPHIT Housing Program Evaluation strategy and timeline.

[1] Kirkpatrick Training Evaluation Model available at:
http://www.kirkpatrickpartners.com/OurPhilosophy/TheNewWorldKirkpatrickModel/tabid/303/Default.aspx

Figure 5. MAPHIT Housing Program evaluation strategy and timeline

Levels	MAPHIT Housing Program Evaluation Strategy	Evaluation schedule
1: Trainee satisfaction with and engagement in training, and perceived relevance of training to the trainee's job	- *Classroom training:* Two Likert scale common metrics questions, one open-ended question about whether desired content was covered, one true/false question about intention to apply training to a certification, and five Likert scale questions about classroom instructors – all administered after each day of classroom training - *Field inspection training:* 11 Likert scale questions and two open-ended question about the field training and 8 Likert scale questions about the field trainers - *Virtual House:* 10 Likert scale questions and three open-ended questions	Common metrics provided for 2018 cohorts; Some results for field inspection training and virtual house available now for 2018 cohorts
2: Trainee acquisition of intended knowledge, skills, and attitudes, as well as confidence about and commitment to use training content	Two Likert scale common metrics questions about the classroom training; 10 question pre-test (administered before classroom training) and post-test (questions embedded within larger final assessment at the end of the course); final assessment grades	Common metrics available now for 2018 cohorts; pre/post-tests and final assessment data available for some members of 2017 and 2018 cohorts
3: Trainee application of what was learned in training when trainee is back on the job	Online survey (to be developed)	TBD
4: The degree to which targeted outcomes or desired impact occur as a result of critical on the job behaviors that result from training	Strategy TBD	TBD

II. Findings:

Below, the evaluation findings are reported for level 1 followed by those for level 2.

A. Level 1 Evaluation Findings

Classroom training

As shown in Figure 6 below, the vast majority of trainees in both cohorts indicated that the classroom training information was presented in a way they could clearly understand and that they were satisfied with the training overall.

Figure 6. Agreement (agree/strongly agree) with Level 1 Common Metrics for MAPHIT Housing Classroom Training

	May (#)	May (%)	Dec (#)	Dec (%)
Day 1: The information was presented in ways I could clearly understand. (May n=23; Dec n=20)	20	87.0	20	100
Day 2: The information was presented in ways I could clearly understand. (May n=23; Dec n=20)	22	95.7	20	100
Day 3: The information was presented in ways I could clearly understand. (May n=23; Dec n=20)	23	100	20	100
Day 1: I was satisfied with this training overall. (May n=23; Dec n=20)	22	95.7	20	100
Day 2: I was satisfied with this training overall. (May n=23; Dec n=20)	23	100	20	100
Day 3: I was satisfied with this training overall. (May n=23; Dec n=20)	23	100	19	95.0

The majority of trainees also indicated that they would apply all three days of classroom training to a state or national certification (see Figure 7).

Figure 7. Trainees who will apply the classroom training to a state or national certification

	May (#)	May (%)	Dec (#)	Dec (%)
Day 1	19	82.6	18	90.0
Day 2	19	82.6	18	90.0
Day 3	19	82.6	18	90.0

Trainees also utilized a five-point Likert scale (1=strongly disagree to 5=strongly agree) to express their level of agreement with five statements about the individual classroom instructors. Day 1 of training was delivered by two instructors. Day 2 content was delivered by three instructors. Day 3 was delivered by four instructors, as well as staff from the Massachusetts Attorney General's office. Across all three days of classroom training for both cohorts, the majority of trainees (70% or more) agreed or strongly agreed that the classroom instructors were well-prepared, knowledgeable, enthusiastic, easily

understood, and engaging and encouraging of questions and class participation. The lowest level of agreement with these statements were associated with a single instructor on Day 1 of the May 2018 classroom training. That instructor received more a favorable evaluation on Days 2 and 3 of May 2018 and for all three days of classroom training in December of 2018.

Figure 8. Range of percentages of trainees who agreed/strongly agreed with statements about classroom instructors

May 2018	Day 1	Day 2	Day 3
Well-prepared	78.3-95.7	95.7-100	100-100
Knowledgeable	73.9-100	95.7-100	100-100
Enthusiastic	73.9-100	91.3-100	95.7-100
Easily understood	78.3-100	91.3-100	95.7-100
Engaging and encouraged questions & class participation	69.6-100	91.3-100	95.7-100
December 2018	**Day 1**	**Day 2**	**Day 3**
Well-prepared	100-100	100-100	100-100
Knowledgeable	95.0-100	100-100	100-100
Enthusiastic	95.0-100	100-100	100-100
Easily understood	95.0-100	95.0-100	100-100
Engaging and encouraged questions & class participation	100-100	90.0-100	100-100

Across both cohorts, some trainees offered responses to open-ended questions about the classroom training. Members of the May cohort offered positive comments about the exercises with the pictures, the content presented, and the instructors.

> *"Thank you for teaching this course. It was incredibly helpful and I am already implementing things I learned and making changes. The variety and knowledge of the guest speakers [i.e., instructors] was great because I got to hear the point of view of some of the many agencies and groups who are involved. I highly recommend using the guest speakers in future classes."*

> *"[This is an] excellent program with knowledgeable instructors that gave great information. really expanded my comfort level and gave concrete examples and explanation. Thank you!"*

A couple of trainees offered critiques of the classroom sessions. Two did not find the role-playing scenarios to be helpful. One of those suggested providing a list of phrases to help guide new inspectors when they are responding to occupants/owners. Another trainee indicated that, following the class, he/she is *"more confused about railings and stairs."*

Three members of the December cohort offered comments. One agreed with the members of the May cohort who did not find benefit to the role-playing. He/she suggested the time could have been better used *"doing more practice code violation picture."* He/she went on to say,

> *"Jeopardy was fun! I also thought it was helpful to have Judge Sullivan discuss the class before Dion and Cheryl and the Attorney General Representatives. It gave a good background and I thought it was helpful to have what he talked about in mind for when Kara, Dion, and Cheryl talked about."*

One trainee indicated that one of the Day 1 instructors moved too quickly and that when he used examples, he seemed to assume people had more information than they actually did. In contrast, another offered this.

> *"As someone who is newer to the field, I thought the training was very well presented and didn't make me feel overwhelmed. The knowledge was well presented so I was able to follow along and absorb everything."*

Virtual house

The majority of trainees in both cohorts who completed the virtual house described themselves as comfortable or very comfortable with the components of the virtual house.

Figure 8. Comfort (comfortable/very comfortable) with virtual house components (May n=14; Dec n=7)

My comfort level with…	May #	May %	Dec #	Dec %
navigation within a room	12	85.7	6	85.7
interactive features to inspect a room, specifically the crouch, flashlight and zoom features	11	78.6	7	100
interactive elements within a room, such as the cabinet doors, water faucet, stove and toilet	12	85.7	7	100
the interactive notepad in which all violations were cited	13	92.9	6	85.7
the overall virtual house app	12	85.7	7	100

In both cohorts, more than 70% of trainees agreed or strongly agreed that they were provided with adequate instructions for use when completing the virtual house inspection, and that the virtual house was an engaging experience, allowed them to identify housing conditions in violation of housing code 410.000, allowed them to properly classify violations, and allowed them to select the 410.000 citations and responsible parties for all observed violations.

Figure 9. Agreement (agree/strongly agree) with statements about the virtual house (May n=14; Dec n=7)

The Virtual House…	May #	May %	Dec #	Dec %
provided adequate instructions for use	11	78.6	5	71.4
was an engaging experience	10	71.4	6	85.7
allowed me to identify housing conditions that were in violation of 410.000	11	78.6	5	71.4
allowed me to properly classify violations	10	71.4	5	71.4
allowed me to select the 410.000 citations and responsible parties for all observed violations	11	78.6	6	85.7

Several of those who completed the virtual house inspection encountered challenges with the program and offered specific information about the problems they encountered. A couple of trainees noted that the program was *"cool"* but also noted they had problems with it *"freezing up."* One suggested there were *"a couple of editing mistakes, such as noting bedroom 2 in the comments for bedroom 1."* Some made comments on their ability to navigate within the program and select appropriate answers.

"The only issues I had were that it did not mention you could address more than one issue at a time. For one of the answers, I only chose violation due to this."

"Several times I could not go back and fix or add something once submitted. [We] should be able to check the answers as a whole."

"The movement could be faster or easier to maneuver; instructions could say to click the (+) for more than one violation (I assumed clicking on more than one in the box was recording each. The virtual house is a fantastic idea and well thought out."

"If you can increase the speed at which you look when you hold a directional arrow down, that would be awesome. Also, if you can make it so it jumbles the violations so I could go through it again, that would be great too!"

Some commented on challenges related to the program's graphics.

"…Except the dead mouse looked like a wet spot to me...improve graphics?"

"Believe it or not, under the sink in kitchen, I thought it was a hole. did not see it as a mouse."

"Cabinets would open but could not see inside. Also, no doors on any of the bedrooms or bathroom."

"Sometimes it was hard to see certain objects more closely. Such as the wires that were said to be hanging from the smoke detector/CO alarm..."

Others raised issues related to violations.

"A few of the violation citations were not an option in the drop-down menu. Particularly in the bathroom; the shower wall should be cited as 410.504 (C) not 410.504 (A)."

"In the classroom, I thought we had been told several times not to cite 410.750 because it was a list that references the codes that we should instead be citing…"

"Some of the citation numbers that could be cited were not available to select."

Field inspections

None of those in the December 2018 cohort had completed the field inspections as of January 2019. Three members of the May 2018 cohort had completed their field inspections at the time of this evaluation report. All three offered agreement (i.e., agreed or strongly agreed) that the classroom training was useful in preparing them for field training, met their expectations, was relevant to their jobs, provided an opportunity to increase their skills, allowed sufficient time for discussion and questions, was easy to schedule, and can be incorporated into their daily work. All three also offered agreement that the required number of inspections was sufficient to prepare them to conduct independent instructions and the field training checklist and field training log were useful tools as they

completed their field training. All three also agreed the field inspectors who conducted their field training were: reliable and punctual, well-prepared and organized, knowledgeable about the state's housing code and inspection process, enthusiastic and motivated to act as a trainer, engaging and encouraging questions and participation, easily understood, able and willing to answer questions, and engaged in efforts to improve the trainees' skills and knowledge. Two of the three trainees offered open-ended feedback. One reported that the field training *"had enough information to start us out on a great path for inspections. Thank you, I really enjoyed the training."* The other complimented his/her field trainer and said the trainer *"…definitely knew her stuff."* Because of the small number of trainees who completed the field inspections at the time of this evaluation, it will be important analyze the data again in 2020 and look at the 2018 and 2019 cohorts to further assess trainee satisfaction with the field inspections when more data are available.

B. Level 2 Evaluation Findings

The overwhelming majority of trainees in both cohorts indicated that their understanding of the subject matter improved as a result of their participation in the training and that they identified actions for applying what they learned in their work.

Figure 10. Agreement (agree/strongly agree) with statements about Level 2 Common Metrics for MAPHIT Housing Classroom Training

	May (#)	May (%)	Dec (#)	Dec (%)
Day 1: My understanding of the subject matter has improved as a result of having participated in this training. (May n=23; Dec n=20)	23	100	20	100
Day 2: My understanding of the subject matter has improved as a result of having participated in this training. (May n=23; Dec n=20)	23	100	20	100
Day 3: My understanding of the subject matter has improved as a result of having participated in this training. (May n=23; Dec n=20)	23	100	20	100
Day 1: I have identified actions I will take to apply information I learned from this training in my work. (May n=23; Dec n=20)	22	95.7	19	95.0
Day 2: I have identified actions I will take to apply information I learned from this training in my work. (May n=23; Dec n=20)	23	100	19	95.0
Day 3: I have identified actions I will take to apply information I learned from this training in my work. (May n=23; Dec n=20)	23	100	19	95.0

The n, mean scores, and range of scores for pre- and post-tests for the 2017 and 2018 cohorts are provided below. Across the four cohorts, pre-test results were available for 103 individuals. The mean pre-test scores were between 62.1 (in December 2017) and 76.2 (in December 2018). At the time of this report, no post-test results were available for the December 2018 cohort, whereas at least some results were available for the May and December 2017 and May 2018. Twenty individuals across the three

cohorts completed all three scenarios and all received a passing grade (a score of 70 or more). The mean scores for first of the three post-tests ranged between 92.3 and 99. For the second post-test, mean scores ranged between 87.3 and 92.3. For post-test three, the mean scores ranged between 84.7 and 93.3.

Figure 11. Pre- and Post-test results for 2017 and 2018 cohorts

	May 2017	Dec 2017	May 2018	Dec 2018
Pre-test n	32	25	26	20
Pre-test mean score	63.7	62.1	70.5	76.2
Pre-test range of scores	40-93	30-87	25-100	55-98
Post-test #1 n	7	10	3	0
Post-test mean score	99	97	92.3	NA
Post-test range of scores	93-100	86-100	86-98	NA
Post-test #2 n	7	10	3	0
Post-test mean score	92.3	91.4	87.3	NA
Post-test range of scores	85-96	80-100	80-95	NA
Post-test #3 n	7	10	3	0
Post-test mean score	93.3	84.7	86.7	NA
Post-test range of scores	86-100	76-100	79-98	NA

III. Conclusion, Recommendations and Next Steps

Overall, the evaluation findings indicate that the training was effective at levels one and two. The findings reveal that the majority of trainees were satisfied with the instructors and classroom training, indicating that the classroom training was relevant and something they could foresee using in their work. The also believed that, because of the classroom training, they had better understand the content. Although the majority provided positive ratings of the virtual house, several people commented on challenges they encountered (e.g., related to navigation, speed, graphics, and citations). The findings related to the final assessment suggest that the course improved trainees' understanding of the subject matter and that they had identified ways in which they would use the information they gained in their work.

Based on the findings, the course administrators should:

1. Review the detailed feedback about the virtual house and address the identified challenges; and
2. Ensure that, in 2020, data related to field inspection are analyzed again and include the 2018 and 2019 cohorts to further assess trainee satisfaction with the field inspections.

Massachusetts Public Health Inspector Training (MAPHIT)
"Partial Completer" Survey Findings

APPENDIX H

Background and Methodology:

MAPHIT Housing is designed for health and housing inspectors charged with enforcement of the state sanitary codes 105 CMR 400 and 410: General Administrative Procedures and Minimum Standards of Fitness for Human Habitation. The program begins with prerequisite online trainings (self-paced and completed before the classroom training starts) then three days of classroom training. These components are then followed by an online virtual house inspection and five supervised field training inspections. In the final phase, trainees complete an online final assessment which requires trainees to answer a three-section quiz about inspection processes and required documentation (inspection report and correction order). The online final assessment is graded (pass/fail) and the students must take the sections in order.

Trainees who successfully complete classroom training receive continuing education credits and those who successfully complete all components of the program are issued a certificate. Although a cohort of trainees begins the program at the same time, individuals may complete the field inspection and assessment portions of the program on different timelines. Therefore, the trainees within a given cohort may not all complete the program at the same time. Additionally, some trainees, generally those who don't actually conduct inspections but who need knowledge about the laws and regulations, don't proceed beyond the classroom training. It generally takes six to twelve months to complete the entire program with a two-year maximum allowed.

As of May 1, 2019, 104 people had enrolled in the course since it shifted to its new modality in May 2017 (live classroom days and field inspections; pre-work, virtual house and final assessment online). Of these, 36 have completed all program requirements of the course and received their certificate of completion. 68 students had not yet completed all of the work required to receive their certificate. To understand why, the evaluator for the Local Public Health Institute (LPHI) of MA conducted a brief online survey to inquire about:

- Whether the individuals intended to complete all aspects of the training when they registered and if not, why not.
- For those who had intended to complete all aspects of the training, why had they not done so and whether/how the LPHI could help trainees to complete all aspects of the training.

Thirty-nine (57.3%) of the 68 "partial completers" responded to the survey. The qualitative data were analyzed for common and divergent themes and illustrative quotes were identified to elucidate the findings.

Findings:

Only one survey respondent (2.5%) indicated that he/she had not intended to complete all aspects of the training at the time of registration. That individual indicated that he/she had been on multiple *"sub-code housing inspections"* and didn't think more were needed. He/she added that, working in a busy department with a small staff means having to *"carefully weight the benefits of anything that has me out of town."* Although the individual did not complete all aspects of the training, he/she noted that,

> *"The classroom part of the training was a great help. It helped me to streamline my correction orders and helped clarify some fuzzier sections of the code."*

The remaining 38 respondents (97.4%) indicated that, upon registration, they had intended to complete all aspects of the course. Six individuals noted that they still intend to finish the requirements.

Nobody described dissatisfaction with the course as a reason for not completing it. In fact, several commented on that they *"saw the value in it"* or *"loved the class*."

Three themes were identified that help to explain why the respondents did not complete the course. This section is organized around these themes, including any corresponding recommendations respondents made that would have helped them to overcome the barrier described.

Theme 1: Difficulty scheduling field training

The most common theme, cited by more than half of respondents, was difficulties in scheduling field inspection training. Several indicated that they had difficulty coordinating the inspections with their work schedules. Most noted that the need for local inspections because of the demands on their work time. For example:

> *"I did not get a chance to finish the hands-on inspections because I could not find a trainer willing to work with my schedule. I just need a few days' notice to get the time off and it was nearly impossible to do. There is only a hand full of trainers and it's been so hard trying to get these inspections done. I would love to do them all in one day or two…"*

> *"I did reach out to some of the housing inspectors listed as trainers…I did only reach out to those that are in my region as I have a very full schedule and it would be ideal if the inspections were somewhat local."*

Several also described difficulty in communicating with the field inspectors.

> *"I completed all aspects of the training up to the field inspections. I reached out to all of the field inspectors in my area to schedule inspections. Only one field trainer responded and we tried to schedule some inspections."*

A few described barriers on the part of the field trainers themselves that interfered with the completion of the inspections, including high demand for field training and/or lack of inspections in which trainees could join the trainers.

> *"I tried scheduling the housing inspections, but it seems that too many people are trying to schedule and there is a backlog."*

> *"Some of the inspections were called off while other scheduled inspections conflicted with necessary tasks that I could not miss from my job."*

> *"…I was unsuccessful in scheduling any inspections with them [field trainers in my area]. I actually only got a response from one of the few that I reached out to and she did not have anything lined up that I could join her on."*

"…Some trainers do not seem motivated to do the trainings, or maybe they have too many students."

One person described the requirement of five inspections as excessive.

"…five field inspections seems cumbersome. We inspectors have plenty to do already and having to coordinate five inspections with someone else is a burden."

The respondents offered several suggestions for addressing the barriers to the field training component of the program, including:

- Increasing the number of field trainers in each region;
- Conducting virtual inspections with reports and order letters done in a class setting;
- Offer the trainers financial incentives (e.g., upon signing up and per inspection) as a way of increasing the number of inspectors and their commitment to helping trainees finish the requirement;
- Setting up a schedule of times for inspections in each region that people could sign up for;
- Designating a particular house and a schedule of possible times that trainees could travel to that location to attend inspections; and
- Reduce the number of inspections.

Theme 2: Time

Although a factor several related specifically to field training (i.e., schedule would not accommodate field training), nine other individuals described insufficient time in their schedules and competing demands on their time as interfering with their ability to complete the requirements in general.

"Finding time to do the rest of the work with my current work load makes it difficult."

A few people offered details about their work and personal lives to demonstrate how complex and coinciding circumstances prevented them from finding the time to meet the training requirements.

"From the time that I completed the course, issues happened in the Health Department. The Public Health Nurse retired and [we were] not able to fill position due to financial issues. The only Public Health Nurse that was still working had an accident at home and was out of work for 3 months. The Public Health Coordinator of the Health Department left to become a Police Officer and the position has not been filled per the Mayor (i.e., financial constraints). I also oversee 6 grants funded by DPH and the grants accounting specialist was offered a promotion in another department and this position is vacant still. I am trying to keep up with the necessities and also do my job. All of this was unforeseen when I completed the class. I was trying to make a myself a well-rounded (i.e., know all of the areas/codes) Health Director, but I am not sure if that is possible right at this time."

"There were a few major setbacks that I ran into after the 3-day Spring 2018 classroom instructions. In July of 2018 my supervisor retired, leaving us without an Inspector, which in turn caused all the inspections to fall on the existing inspectors. In October 2018, I had a heart attack which kept me out of work for some time. In March of 2019, my brother passed away unexpectedly, which took a toll on me and my family."

Only two suggestions were made that individuals thought might help address the barrier that time created for them. One indicated that periodic reminders about the deadline for completing requirements might have caused him/her to prioritize the training over other competing demands. Three individuals noted that, if they were granted an extension, they would be willing to finish the training requirements.

> *"I knew I should get it done, but I was just extremely busy. Then I knew that the two years had lapsed. If I had an extension, I would be willing to complete the program."*

Theme 3: Technical issues

Four respondents described technical difficulties as a reason for not completing the virtual house inspection, with most explaining that their computers at work were not capable of running the program.

> *"My work computer will not run the virtual housing program and I have a hard time finding personal time to do it."*

The only recommendation related to the technical issues described was to offer trainees more time so they could find "*personal time*" to complete the virtual house inspection.

Conclusions and recommendations:

Although the survey respondents were unable to complete the training requirements, it seems they valued the training they received and would have preferred to complete all aspects of it. Based on the survey responses, it seems that, if the LPHI could perhaps extend the time in which requirements must be completed, send periodic reminders, and implement steps to increase the availability of field trainers, it may be possible for more individuals to complete all aspects of the training. The course administrators should consider the detailed recommendations offered by the survey respondents and determine which may be feasible.

Managing Effectively in Today's Public Health Environment
Level Three Evaluation Findings

APPENDIX I

Background and methodology:

The most recent iteration of the Managing Effectively in Today's Public Health Environment (management) course began on November 29, 2016 and concluded on March 28, 2017. The course, which took place over 18 weeks, is comprised of 15 sessions (10 live webinars, three self-paced online sessions, and two classroom sessions). For each session, pre-work was required to prepare students for the upcoming session. Following each session, post-assignments required students to utilize the information covered in the previous session. Each student was assigned to a group and provided a mentor with whom he/she communicated throughout the course. Fifty-three students began the course in November and 50[5] completed all requirements and graduated in March, a 94.3% completion rate.

The New England Public Health Training Center (NEPHTC) and Local Public Health Institute (LPHI) of Massachusetts, which administers the management course, utilizes the Kirkpatrick Training Evaluation Model,[6] which suggests that training should be evaluated on four levels:

Level One	Trainee satisfaction with and engagement in training, and perceived relevance of training to the trainee's job
Level Two	Trainee acquisition of intended knowledge, skills, and attitudes, as well as confidence about and commitment to use training content
Level Three	Trainee application of what was learned in training when trainee is back on the job
Level Four	The degree to which targeted outcomes or desired impact occur as a result of critical on the job behaviors that result from training

The level one evaluation findings indicated that the majority of trainees were satisfied with the course overall, as well as specific aspects of the course (e.g., how the information was presented, individual sessions or content areas covered, the instructors and guest speakers, the opportunity to network with others, and the tools and resources provided). Most trainees identified actions to apply information to their jobs, which indicates the course content is relevant to their work and a subset will apply the training to a state or national certification. With regard to level two findings, the majority of trainees reported the training improved their understanding of the course's subject matter. The pre/post-test results also indicate that the course was effective at improving trainee knowledge.

Six months after the course ended, the NEPHTC/LPHI evaluator developed a survey to assess the level three impact of the training on course participants. Forty-eight[7] of the 50 course graduates were contacted via email and asked to complete an online survey. Thirty participants completed the online survey (a 62.5%

[5] 4 of the 50 students were unable to attend the last day of the course but have completed all evaluation requirements and are in the process of completing a final assignment for the course.
[6] Kirkpatrick Training Evaluation Model available at: http://www.kirkpatrickpartners.com/OurPhilosophy/TheNewWorldKirkpatrickModel/tabid/303/Default.aspx
[7] Two participants left their jobs since completing the course; updated email addresses were not available for these participants.

response rate). This report details the survey findings and offers recommendations for increasing the impact of the course.

Findings:

The survey respondents have worked in governmental public health for an average of 9.2 years with a range of 1-30 years. They have held management positions for a range of 5.9 years with a range of 0 to 23 years.[8] The respondents occupy a range of professional roles. Most (56.6%) are in management positions such as local health directors, program managers, and administrators (See Figure 1).

Figure 1. Public Health Role

Roles:	TOTAL (#)	TOTAL (%)
Administrator	4	13.3%
Board of Health Member	0	0.0%
Local Health Director	6	20.0%
Local Health Agent	2	6.7%
Environmental Health Inspector/Specialist/Sanitarian	2	6.7%
Program Manager	7	23.3%
Public Health Coordinator	3	10.0%
Public Health Nurse	0	0.0%
State/MDPH employee	1	3.3%
Other: Case management assistant, coordinator, counselor, EMS Captain, and two evaluators.	5	16.7%
TOTAL:	30	100.0%

The NEPHTC and LPHI seek to engage training participants from across the Commonwealth in their trainings. The NEPHTC and LPHI partnered with the Boston Public Health Commission (BPHC) in delivering the 2016/2017 iteration of the course. Twenty-nine of the course graduates and 16 (53.3%) of the survey respondents are BPHC employees. Thus, it is not surprising that just over half of participants identified the Health and Medical Coordinating Coalition (HMCC) area in which they work as Boston (See Figure 2). The survey participants represent all of the HMCC areas except for HMCC 5, the South Shore, Cape and Islands.

Figure 2. HMCC in which course participants work

HMCCs:	TOTAL (#)	TOTAL (%)
1=Western MA	1	3.3%

[8] Two BPHC employees were not currently in management roles.

2=Central MA	4	13.3%
3=North MA	4	13.3%
4AB=Metro Boston	4	13.3%
4C=Boston	16	53.3%
5=South Shore, Cape and Islands	0	0.0%
Don't know	0	0.0%
Other: State employee	1	3.3%
TOTAL:	30	100.0%

Survey respondents were asked to use a Likert scale (1=strongly disagree to 5=strongly agree) to indicate their level of agreement with a series of statements about the course. Respondents could also select "Not applicable" if they had not yet had an opportunity to assess one of the statements since finishing the course. The "n" in Figure 3 shows that most participants felt prepared to assess their agreement with each statement. The majority of respondents (between 70.4% and 90%) agreed with all of the statements in Figure 3, which indicates that they perceive the course has had a positive impact on their knowledge, confidence, skills, and effectiveness as a manager. The majority feel they have a better understanding of effective management practices, are more confident about their abilities as a manager, and think more strategically about how to achieve goals. Most believe they are stronger advocates for their staff and programs and use available resources more effectively. Most also feel they are better at motivating their staff and colleagues and building consensus among them. They report they are better at supporting the professional development of their staff and are more effective managers overall.

Managing Effectively in Today's Public Health Environment
Level Three Evaluation Findings

Figure 3. Agreement (somewhat/strongly agree) with statements about the impact of the course

	Could assess statements	Somewhat or strongly agreed	
As a result of the management course…	**n**	**(#)**	**(%)**
I have a better understanding of effective management practices.	30	27	90.0%
I think more strategically about how to achieve goals.	29	26	89.7%
I have more confidence in my ability as a manager.	30	26	86.7%
I am a stronger advocate for my staff and/or program(s).	30	25	83.3%
I am better at motivating staff and colleagues.	30	25	83.3%
I believe I have become a more effective manager.	29	24	82.8%
I am better at building consensus among staff and colleagues.	29	23	79.3%
I use available resources more effectively.	29	23	79.3%
I work more collaboratively with others (e.g., departments, programs, organizations).	30	23	76.7%
I am better at supporting the professional development of my staff.	27	19	70.4%

Over 60% of respondents also indicated that they have used the resources and handouts provided in the course in their work (65.5%) and believe the relationships they developed with students and instructors have provided a useful network they can use when they have questions or want to problem-solve about a work-related issue (62.1%).

Survey respondents were asked to review a list of 15 topics covered in the course and indicate which are part of their job. Those who perform these tasks in their work then indicated whether the course has influenced how efficiently and/or effectively they perform these aspects of their work. As shown in Figure 3, the majority of respondents (between 68.8% and 93.3%) believe the course has had a positive impact on their work as supervisors, including their ability to recruit, hire, onboard, coach, and discipline employees; deal with employee grievances; comply with labor laws; and address collective bargaining. Most feel the course improved their ability to manage projects and project teams (96.2%), as well as budgets and fiscal resources (76.5%). Most (83.3%) feel more efficient and/or effective at leading organizational change and indicated that the course influenced their ability to market public health (80%), evaluate programs (77.3%), and conduct quality improvement (76.9%). The course influenced many respondents' collaboration with the community (68%) and their ability to conduct community health assessments (55%). Half (50%) also believe the course influenced their grant writing.

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Figure 4. Job tasks that respondents believe they do more effectively/efficiently as a result of the course

	This is an aspect of my job	Yes, I do this aspect of my job more efficiently and/or effectively as a result of the course	
Job tasks:	**(#)**	**(#)**	**(%)**
Managing projects and project teams (n=30)	26	25	96.2%
Dealing with employee grievances (n=30)	15	14	93.3%
Onboarding and coaching employees (n=30)	23	21	91.3%
Recruiting and hiring employees (n=30)	22	19	86.4%
Leading organizational change (n=30)	24	20	83.3%
Marketing public health (n=29)	20	16	80.0%
Disciplining employees (n=30)	14	11	78.6%
Program Evaluation (n=30)	22	17	77.3%
Quality Improvement (n=29)	26	20	76.9%
Managing budgets and fiscal resources (n=29)	17	13	76.5%
Addressing collective bargaining (n=30)	8	6	75.0%
Complying with labor laws (n=30)	16	11	68.8%
Collaborating with the community (n=30)	25	17	68.0%
Community Health Assessments (n=30)	20	11	55.0%
Grant writing (n=30)	14	7	50.0%

Respondents were asked to describe other ways in which the management course has influenced their job performance. Several expressed their gratitude for the course and indicated that the course has changed their perspective on and approach to their work as a manager.

"This course has influenced me to pay more attention to how I work as a manager."

"The management course was great in the fact that I take a step back and assess overall issues, situations, problems. [I] deal with the issue at hand and look for ways to solve [them] amicably.

"After being in my role for a number of years, it [the course] helped me refocus and helped me with developing a plan to move my department forward. We are conducting a community health assessment now, have used the onboarding materials and will be doing some marketing of the department."

One BPHC participant noted that the course also provided an opportunity to understand how the rest of the commission works and now wishes for more opportunity for the bureaus to work together.

When asked if there was anything they wish the course had covered that it did not, two commented on how and what the course addresses in the area of fiscal management.

> *"I would like to see this course build an actual budget for a year and adjust to cuts."*

> *"There was a budgeting section covered in the course, but it might be helpful to help managers think about innovative funding strategies as local public health continues to struggle to access local dollars. For example, revolving funds, grants, gift funds – how to set them up and how to access these types of revenue. Also important would be legislative/lobbying and how to speak to legislators (local, state, and federal). This helps when trying to get budgets increased or attention on issues. Increases in budgets equals increases in staff and programs which increases impact."*

A couple wished the course did more to address issues of health equity. Two also would have liked more content related to management of staff.

> *"[I'd like to have] more on coaching and building employees; more on supervision, not just discipline."*

> *"[I'd like] more in-depth on supervision, especially power dynamics regarding race and gender.*

One person wanted more on interagency collaboration to assist in managing common problems and another would have liked an opportunity to get to know other participants better. One thought the course topics were ideal but would like a "Management Part II" to learn more about each one.

Conclusions and recommendations:

The findings indicate that most respondents feel the course has had a positive impact on several aspects of their work as managers and was effective at influencing their job performance (i.e., Level three impact). There were only a few suggestions for improving the course. The course administrators should consider opportunities for further addressing fiscal/budget issues, supervision and staff development, and interagency collaboration, as well as opportunities for increasing participant interaction and building relationships. The administrators may want also to assess whether sufficient demand exists, among previous and future cohorts, for continued learning (e.g., advanced management training, a community of practice).